SYDNEY METRO - WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

Baseline Groundwater Report (Project-wide)

Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works

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Any revisions or amendments must be approved by the Design Director and/or client before being distributed / implemented.

Revision Details

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1 Introduction

Sydney Metro has engaged CPB Ghella Joint Venture (CPBG) for the design and construction of Station Boxes and Tunnelling Works (SBT Works)for the Western Sydney Airport (WSA) project (the Project). The Project forms part of the broader Sydney Metro network, and involves the construction and operation of a new 23km metro rail line from the existing Sydney Trains suburban T1 Western Line (at St Marys) in the north and the Aerotropolis (at Bringelly) in the south. The alignment includes tunnels and civil structures, including a viaduct, bridges, and surface and open-cut troughs between the two tunnel sections (Figure 1-1).

This report has been prepared by Tetra Tech Major Projects Pty Ltd (TTC) on behalf of CPBG to report on baseline groundwater conditions prior to construction.

1.1 Project overview

The Project will be delivered through several works packages. The SBT Works package includes the design and construction of:

- Two sections of twin tunnels with a combined length of approximately 9.8km, plus associated portal structures, one from Orchard Hills to St Marys and the other under Western Sydney International (WSI) airport to the new Aerotropolis Station
- Excavations at either end to enable trains to turn back, and stub tunnels to enable future extensions
- Station box excavations with temporary ground support for four stations at St Marys, Orchard Hills, Airport Terminal and Aerotropolis
- Excavations for two intermediate services facilities, one in each of the tunnel sections at Claremont and Bringelly.

1.2 SBT Works objectives

The project objectives as determined by Sydney Metro:

- Achieve successful and timely completion of the Project
- Provide the tunnel infrastructure required for conveying passenger rolling stock over a 120-year Design Life between St Marys and Western Sydney Aerotropolis
- Deliver SBT Works in a collaborative and cooperative manner to ensure the timely and effective delivery of the overall Project
- Minimise impacts on the environment, including but not limited to noise and vibration, air quality, traffic and transport, heritage, waste, water and energy management and embodied environmental impacts
- Maximise opportunities in relation to social sustainability, including workforce development and local procurement
- Minimise disruption, delay and inconvenience to the affected public, road and public transport users, adjacent businesses, and stakeholders (including WSA Co and WPCA) and the community during the performance of the SBT Contractor's activities
- Achieve a value-for-money outcome when viewed on the basis of effective risk management, certainty of delivery and whole-of-life cost
- Progressively hand over the completed Portions of the SBT Works by the applicable Dates for Substantial Completion and in accordance with the requirements of the D&C Deed (including the SBT Specification) such that the Project is operational by the WSI airport opening which is targeted for 24 December 2026.

1.3 SBT Works scope

The construction methodology for the SBT Works entails:

- Utility works including removal, diversion, protection and connection to SBT worksites
- Local area works including provision of site accesses and some road upgrades
- Site establishment works including:
  - Fencing
  - Installation of environmental mitigation measures including erosion and sediment controls, noise barriers and acoustic enclosures
  - Clearing and grubbing of existing vegetation
  - Demolition of existing buildings and structures
  - Site levelling and drainage works
  - Establishment of internal access roads, hardstand areas and onsite parking
  - Erection of demountable buildings including offices and amenities
  - Other ancillary facilities including the erection of sheds, establishment of materials laydown and stockpiling areas and Tunnel Boring Machine (TBM) support works including spoil conveyors.
- Construction of station, shaft and dive excavations predominately completed by piling and excavators with rippers and hammers. Roadheaders will also be used at St Marys and Aerotropolis to complete the stub tunnels
- Construction of mainline tunnels using four TBMs, as follows:
  - Two earth pressure balance TBMs will be launched from Orchard Hills and tunnel north to St Marys a distance of approximately 4.3km, including traversing the Claremont Shaft. The TBMs will be retrieved from the St Mary's station box.
  - Two double shield TBMs will be launched from the Airport Dive and tunnel south, traverse the Airport Terminal station box and shaft, where tunnelling will stop and the conveyor and backend equipment will be demobilised from the Airport Dive and re-established at the Airport Terminal Shaft. The TBMs will then recommence tunnelling, including traversing the Bringelly Shaft, and will be retrieved from the Aerotropolis station box (5.5km from the Airport Dive, with 2.5km of the southern tunnels located within NSW).
  - Cross passages will be constructed using concrete saws and excavators with hammers.

It is anticipated that the shaft and station excavations will be completed in advance of TBM tunnel construction. The TBMs will be delivered via oversize heavy vehicles to Orchard Hills and the Airport Dive site and retrieved from St Marys and Aerotropolis, subject to relevant approvals.

The SBT Works do not include any surface works between the northern and southern tunnel sections, which are to be undertaken by another contractor.

Tunnelling, including station box, shaft and dive excavation and associated support activities will occur 24 hours a day, seven days a week. Utility and local area works that cannot be completed during standard daytime hours due to Road Occupancy Licence or utility authority requirements will also be undertaken out of hours.

Completed sections of the SBT Works, including established construction worksites, will be progressively handed over to Sydney Metro to enable follow-on contractors to commence works. The exception is the temporary precast facility, where the site will be decommissioned following the completion of segment manufacture and storage, and hydroseeded.

An overview of works at each SBT worksite is provided in Table 1-1.

Table 1-1: SBT Worksite overview

Jurisdiction	Worksite	Indicative scope of works
NSW	St Marys	• Demolition of existing industrial premises • Offices, amenities, car parking and access roads • Piling and station box excavation using rippers and rock hammers • Stub tunnel excavation using road headers

Jurisdiction	Worksite	Indicative scope of works
		• TBM retrieval.
NSW	Claremont Meadows	• Offices, amenities, car parking and access roads • Piling and services facility shaft excavation using ripper and rock hammers • Construction of part of the cast-in-situ permanent shaft • Cross passage construction support • Invert construction support (subject to Sydney Metro approval).
NSW	Orchard Hills	• Demolition of existing buildings and removal of septic tanks • Offices, amenities, car parking and access roads • Lansdowne Road temporary diversion and construction of the permanent road bridge • Piling and portal, station box and dive excavation using rippers and rock hammers • Construction of cast-in-situ permanent portal structure • TBM assembly, launch and tunnelling support works • Cross passage construction support.
On-Airport	Airport Portal Dive Structure	• Offices, amenities, car parking and access roads • Piling and portal excavation using rippers and rock hammers • Open cut dive excavation using rippers and rock hammers • Construction of cast-in-situ permanent dive structure • TBM assembly, launch and tunnelling support works • Cross passage construction support.
On-Airport	Airport Terminal and TBM shaft	• Offices, amenities car parking and access roads • Piling and station box and shaft excavation using rippers and rock hammers • TBM re-launch and tunnelling support works • Cross passage construction support.
On-Airport	Precast Facility	• Offices, amenities, car parking and access roads • Precast facility • Materials laydown • Segment storage • General storage.
On-Airport	Primary Spoil Receival	• Access road • TBM spoil conveyor set up • Earthworks in accordance with Sydney Metro Specifications.
NSW	Bringelly	• Offices, amenities, car parking and access roads • Piling and services facility shaft using rippers and rock hammers • Construction of part of the cast-in-situ permanent shaft • Cross passage construction support • Invert construction support (subject to Sydney Metro approval).
NSW	Aerotropolis	• Offices, amenities, car parking and access roads • Piling and station box excavation using rippers and rock hammers • Stub tunnel excavation using roadheaders • TBM retrieval

Note: Worksites in grey are within the boundary of the Western Sydney International (On-Airport) and regulated under the *Commonwealth Airports Act 1996*.

Figure 1-1: Overview of SBT works

1.4 Limitations

In addition to data generated to specifically inform the assessment of baseline groundwater conditions and detailed site investigations (DSI) carried out by CPBG, this report relies on information obtained directly from Sydney Metro, supplied digital databases and the Environment Impact Statement (EIS), which includes (but not limited to):

- Water level/pressure, water quality and aquifer parameter data
- Survey data
- Laboratory analytical data
- Engineering borehole logs

Aquifer parameter testing has been carried out across the alignment, however, data gaps and uncertainty regarding site-specific conditions remain. Where site-specific information is not available, recommendations of parameter values have been made based upon published information, local experience and correlations.

The following key hydrogeological data gaps and limitations are noted:

- The influence of structural geology (i.e. faults, folds and dykes) on groundwater flow behaviour and the mobilisation of existing groundwater contamination.
- The influence of permanent water bodies, open drains, well fields and similar on groundwater flow behaviour and the mobilisation of existing groundwater contamination.
- Geology and groundwater elevation is characterised along the alignment, however, less information exists off-alignment and extrapolation of ground conditions beyond the alignment for the assessment of groundwater levels and drawdown is required which creates uncertainty in the assessments and predictions.
- Changes to groundwater conditions are expected to have occurred as a result of filling on the airport site. Groundwater monitoring data post filling is extremely limited. This affects the reliability of the assessment of groundwater levels.
- Unidentified sources of existing groundwater contamination may be present.
- Limited long-term groundwater level data is available to characterise historical groundwater conditions including temporal variability. This introduces uncertainty around the nomination of representative stable groundwater levels which are used to derive aquifer boundary conditions for numerical modelling as well as design groundwater levels.
- Due to limitations in the testing and water level monitoring records, there is uncertainty in the outcomes of the assessment. This uncertainty extends to the assessment of inflow rates to excavations and the extent and magnitude of drawdown associated with the construction and operation of the WSA SBT. Additional monitoring and assessment will need to be carried out as design progresses and during construction to reduce the extent of this uncertainty.

1.5 Definitions and Abbreviations

Table 1-2: Definitions and Abbreviations

Acronym/ Abbreviation	Definition
AMO	Aeronautical Meteorological Office
ANZG (2018)	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018)
BoM	Bureau of Meteorology
BTEXN	Benzene, Toluene, Ethylbenzene, Xylene
CoC	Chain of Custody
CPBG	CPB Contractors Gella Joint Venture
DQO	Data Quality Objective
EC	Electrical conductivity
EIS	Sydney Metro Western Sydney Airport – Environmental Impact Statement
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
GDEs	Groundwater Dependent Ecosystems
GMP	Groundwater Monitoring Program
GWQ	Groundwater Quality
HIR	Hydrogeological Interpretive Report
LOR	Limit of Reporting
MAH	Monocyclic Aromatic Hydrocarbons
mAHD	Elevation in metres with respect to the Australian Height Datum
mBGL	Metres Below Ground Level
mBTOC	Metres Below Top of Casing
NATA	National Association of Testing Authorities
OCP	Organochlorine Pesticides
OPP	Organophosphorus Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCE	Perchloroethene
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane-Sulfonic Acid
QA	Quality assurance

Acronym/ Abbreviation	Definition
QC	Quality control
RPD	Relative Percent Difference
SBT Works	Station Box and Tunnelling Works
SF	Service Facility
SVOC	Semi-Volatile Organic Compounds
TBM	Tunnel boring machine
TCE	Trichloroethene
TDS	Total Dissolved Solids
TfNSW	Transport for NSW
TOC	Total Organic Carbon
TRH	Total Recoverable Hydrocarbons
TTC	Tetra Tech Major Projects Pty Ltd
µS/cm	Micro-Siemens per centimetre
VOC	Volatile Organic Compounds
VWP	Vibrating Wire Piezometers
WSA	Western Sydney Airport
WSI	Western Sydney International

2 Primary information sources

The primary documents supporting this baseline assessment of groundwater include:

- M2A Joint Venture (WSP and AECOM) (2020). Sydney Metro Western Sydney Airport – EIS Chapter 14: Flooding, hydrology and water quality
- M2A Joint Venture (WSP and AECOM) (2020). Sydney Metro Western Sydney Airport – EIS Chapter 15: Groundwater and geology
- M2A Joint Venture (WSP and AECOM) (2020). Sydney Metro Western Sydney Airport – EIS Technical Paper 6: Flooding, hydrology and water quality
- ARUP (2020). Sydney Metro Western Sydney Airport – EIS Technical Paper 7: Groundwater Ref. SMGW-ARP-AEC-GE-REP-002447. October 2020
- Western Sydney Airport – EIS Volume 2 Chapter 17 Topography, geology and soils
- ARUP (2020). Sydney Metro Western Sydney Airport – Station Boxes and Tunnelling Concept Design Geotechnical Interpretative Report (GIR) Ref. SMWSA-ARP-SWD-GE-REP-002875 Rev C. 16 December 2020
- ARUP (2020). Sydney Metro Western Sydney Airport – Northern Tunnel Hydrology and Drainage SBT3 Ref. SMWSA-ARP-SWD-DD-REP-002448 Rev E. 11 December 2020
- ARUP (2020). Sydney Metro Western Sydney Airport – Southern Tunnel Hydrology and Drainage SBT3 Ref. SMWSA-ARP-SWD-DD-REP-003631 Rev B. 11 December 2020
- ARUP (2020). Sydney Metro Western Sydney Airport – Technical Advisory Services – Climate Change Report Ref. SMWSA-ARP-SWD-SU-REP-002387 Rev F. 11 December 2020
- Cardno (2021). Sydney Metro Western Sydney Airport – Groundwater Monitoring Report Ref. 8002188-CDO-GWMR5-RPT003 – Rev A 8 September 2021
- CPB Lendlease Joint Venture (2019). Western Sydney Airport – Bulk Earthworks – Package Badgerys Creek – Geotechnical Interpretive Report – Design Lot 0352 – Design Phase 2 Ref. WSA10-CPBLLBE-01000-GT-RPT-352001-Rev B 2 December 2019
- GHD (2017) Western Sydney Airport – Geotechnical and Seismic Investigations – Review of Environmental Factors Ref 21/24265 June 2017
- Golder and Douglas Partners (2021). Sydney Metro Western Sydney Airport – Groundwater Monitoring Report – Phase 1 – 4 Locations Ref. 19122621-018-R-GWMR12 Rev 0. 24 March 2021
- Golder and Douglas Partners (2019). Supplementary Site Investigation, 1-7 Queen Street, St Marys, NSW, 17 July 2019.
- PPK (1997) Proposal for a Second Sydney Airport at Badgerys Creek or Holsworthy Military Area – Technical Paper 7 Geology, Soil and Water
- Tetra Tech Major Projects (2022) Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works Aerotropolis Detailed Site Investigation Ref: SMWSASBT-CPG-SWD-SW000-GE-RPT-040515_RevA06
- Tetra Tech Major Projects (2022) Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works Bringelly Services Facility Detailed Site Investigation Ref: SMWSASBT-CPG-SWD-SW000-GE-RPT-040512
- Tetra Tech Major Projects (2022) Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works Orchard Hills Station Detailed Site Investigation Ref: SMWSASBT-CPG-SWD-SW000-GE-RPT-040514

- Tetra Tech Major Projects (2022) Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works St Marys Station Detailed Site Investigation Ref: SMWSASBT-CPG-SWD-SW000-GE-RPT-040513
- Tetra Tech Major Projects (2023) Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works Hydrogeological Report (Project-wide) Ref: SMWSASBT-CPG-SWD-SW000-GE-RPT-040403
- Tetra Tech Major Projects (2023) Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works Project-wide Groundwater Modelling Report Ref: SMWSASBT-CPG-SWD-SW000-GE-RPT-040402

Discrepancies identified in the available data include:

- The screened interval of the monitoring wells (300 series) presented in Table 3.1 – SMGW Monitoring Well Summary of the Groundwater Monitoring Report (GWMR) – 4B5B11B12B Sydney Metro Western Sydney Airport by Cardno (Ref: 8002188-CFO-GWMR-RPT003-Rev D) dated 6 May 2021 is inconsistent with the borehole logs and groundwater well installation designs in Appendix B of that report.
- Monitoring wells SMGW-BH-A310, SMGW-BH-A310S, SMGW-BH-A311, SMGW-BH-B313 and SMGW-BH-B317 presented in Table 3.1 - SMGW Monitoring Well Summary of GWMR (Ref: 8002188-CFO-GWMR-RPT003-Rev D) are not shown in Table 4.1 – Standpipe Piezometer Summary of the Geotechnical Data Report (GDR) – Sydney Metro Western Sydney Airport by Cardno (Ref: 8002188-CDO-GDR-RPT001-Rev B) dated 17 March 2021.
- Table 3.2 – Summary of VWP installations of the GWMR and Table 4.1 – Summary of VWP installations of the GWMR of the GDR showed VWP installation at one borehole location (SMGW-BH-A318), however, the well logs indicated VWPs were installed at other borehole locations.
- Hydrographs for wells contain numerous disturbances due to sampling or development of the wells. These disturbances influence measured groundwater levels and create uncertainties concerning the interpretation of typical groundwater levels and groundwater variation in response to rainfall events.

Where these discrepancies have been identified, and there was a lack of clarification from the original author, we have referenced the original data to make our assessment.

2.1 Publicly available sources

The key sources of publicly available data and reports used to support the assessment include:

- BoM (2016). Design Rainfall Data System http://www.bom.gov.au/water/designRainfalls/revised-ifd/
- BoM (2020a). Groundwater Dependent Ecosystem Atlas. http://www.bom.gov.au/water/groundwater/gde/map.shtml
- BoM (2020b). Climate Data Online. http://www.bom.gov.au/climate/data/
- Colquhoun G.P., Hughes K.S., Deyssing L., Ballard J.C., Folkes C.B, Phillips G., Troedson A.L. & Fitzherbert J.A. (2020). New South Wales Seamless Geology dataset, version 2.0 [Digital Dataset]. Geological Survey of New South Wales, Department of Regional NSW, Maitland
- CSIRO and Bureau of Meteorology (2015). Climate Change in Australia Information for Australia's Natural Resource Management Regions: Technical Report, CSIRO and Bureau of Meteorology, Australia

- NSW Government – Mining, Exploration and Geoscience – Geological maps. https://resourcesandgeoscience.nsw.gov.au/miners-and-explorers/geoscience-information/products-and-data/maps/geological-maps/1-100-000
- NSW Office of Water (2011). Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources – Background document
- Department of Primary Industries, Water (2016). Water Sharing Plan for the Metropolitan Region Unregulated River Water Sources: Background document for amended plan 2016 incorporating the Kangaroo River Management Zone
- WaterNSW (2020). WaterNSW Water Information Hub, incorporating the realtimedata portal

3 Baseline Groundwater Assessment

3.1 Groundwater Monitoring Program

A Groundwater Monitoring Program (GMP) has been developed to meet the requirement for a groundwater construction monitoring program (requirement C13 of the Conditions of Approval for Sydney Metro – Western Sydney Airport (SSI 10051)).

The GMP describes how CPBG will monitor the extent and nature of potential impacts to groundwater levels and quality during the SBT Works, which will allow for implementation of appropriate management measures to address construction impacts.

Understanding baseline conditions is essential to identify potential impacts, and informing appropriate management measures are implemented to address those impacts, and manage effects on local groundwater quality and levels.

This assessment of baseline groundwater conditions is based on Revision 1 of the GMP (SMWSASBT-CPG-SWD-SW000-GE-RPT-040404, dated 21 September 2022) which has been endorsed by the Environmental Representative (ER) and approved by the Planning Secretary of DPE.

The Conditions of Approval met by this baseline groundwater assessment are presented in Table 3-1.

Table 3-1: Condition and requirement relevant to baseline groundwater assessment

Condition	Requirement	Report section where requirement met
C14 (a)	details of baseline data available including the period of baseline monitoring;	Section 5, 7, 8 and Annexure D and E
C14 (b)	details of baseline data to be obtained and when;	Section 3 (and GMP Section 5.1)
C14 (c)	details of all monitoring of the project to be undertaken;	Section 3 (and GMP)
C14 (d)	the parameters of the project to be monitored;	Section 6
C14 (e)	the frequency of monitoring to be undertaken;	Section 6 (and GMP)
C14 (f)	the location of monitoring;	Section 5 and Annexure A
C14 (j)	a consideration of SMART principles;	Section 3, 6, 7, 8 (and GMP)
C16 (a)	Groundwater monitoring networks at each construction excavation site predicted to intercept groundwater in the documents listed in Condition A1;	Section 5 and Annexure A (and GMP)
C16 (b)	Detail of the location of all monitoring bores with nested sites to monitor both shallow and deep groundwater levels and quality;	Section 6 (and Annexure A of GMP)
C16 (c)	Define the location of saltwater interception monitoring where sentinel groundwater monitoring bores will be installed between the saline sources and that of each construction excavation site predicted to intercept groundwater in the documents listed in Condition A1;	Section 5 (and Section 6 of GMP)
C16 (d)	Results from existing monitoring bores;	Section 8 and Annexure D

Information to be included in baseline groundwater assessment is detailed in Section 5.1 of the GMP, and includes:

- Existing data collected prior to STM works commencing (summarised in Annexure D of the GMP).
- Additional baseline monitoring to address groundwater contamination data gaps (as summarised in Table 5-3 of the GMP).
- Installation and monitoring of groundwater monitoring bores and vibrating wire piezometers (VWPs) across the SBT Works alignment for monitoring level and/or quality during construction. These locations are to specifically monitor where the potential for environmental impacts during construction has been identified, or where existing wells will be destroyed or become dry during construction, and no existing monitoring locations were available as an alternative (detailed in Section 5.2 of the GMP).

The baseline monitoring program is detailed in the GMP, with monitoring locations shown on Figures A1 to A6, Annexure A of the GMP.

Groundwater levels and quality has been assessed across seven zones of the project alignment;

- St Marys Station
- Claremont Meadows Services Facility
- Orchard Hills Station
- Airport Portal Dive
- Airport Terminal Station
- Bringelly Services Facility
- Aerotropolis Core Station

Baseline groundwater data presented in this report includes all data collected during the pre-construction period for existing and new bores, including:

- Water level monitoring data (from manual gauging and automatic data loggers)
- Groundwater quality sampling at nominated locations for selected analysis by a NATA accredited laboratory.

The dataset for the baseline groundwater assessment as of 10 May 2023 is incomplete.

The following sections of this report provide an assessment of baseline conditions based on the available data.

CPBG are currently undertaking a re-drill program of critical groundwater wells along the alignment and attempts to access and sample outstanding locations are ongoing.

It is recommended that this report be reviewed or further updated following completion of the groundwater re-drill program and sampling of these locations, and those with outstanding access issues.

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4 Site setting

Detailed information relating to the site setting with respect to groundwater across the SBT Works alignment is provided in the Hydrogeological Report (Project- wide), SMWSASBT-CPG-SWD-SW000-GE-RPT-040403 (current Revision C, dated 2 March 2023). Information relevant to the dataset collected to inform baseline groundwater conditions is summarised below.

4.1 Climate

The climate of the project area is humid subtropical. It varies from mild to cool in winter to warm to hot in the summer, with a strong seasonal difference producing hot and wet summers often with thunderstorms in late summer through early autumn and warm and drier winters with a greater proportion of clear days in late winter through to early spring.

The rainfall summary based on the records from 1887 to 2022 held by the Bureau of Meteorology (BoM) for the Prospect Reservoir Aeronautical Meteorological Office (AMO) weather station 67019 (BoM, 2022b), located to the east of the project corridor is presented in Figure 4-1. The historical rainfall record shows average monthly rainfall varies from 46 mm in September to 104 mm in March. Extreme events can be 5 times this magnitude, as well as years with virtually no rain.

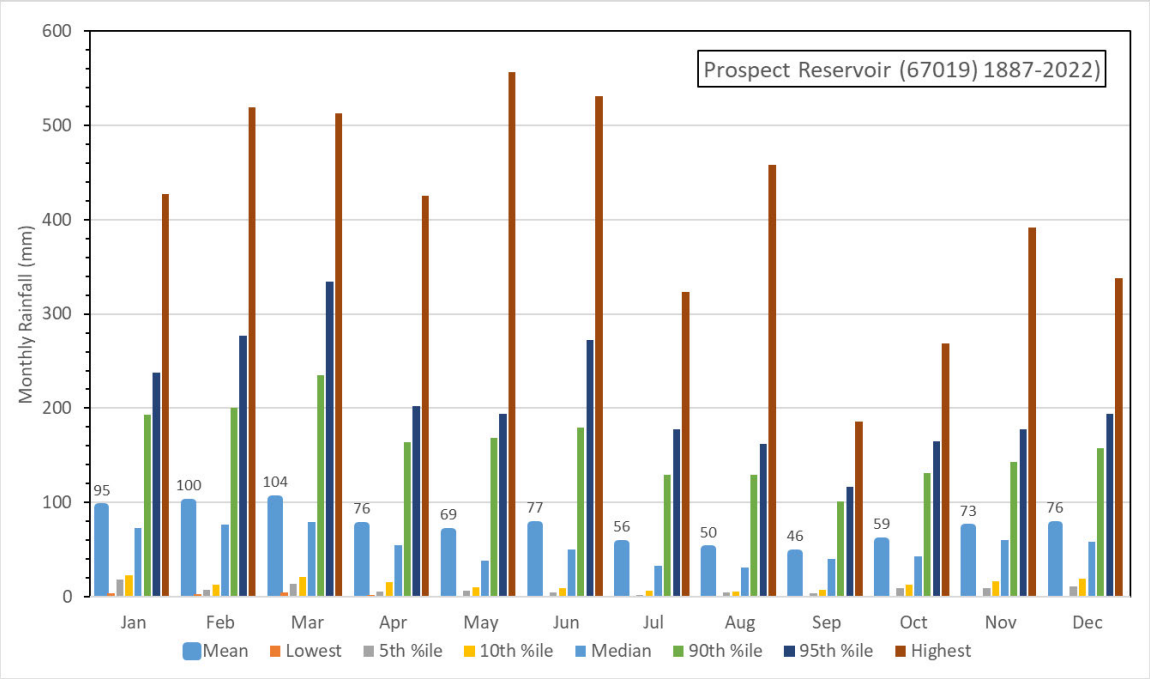


Figure 4-1: Summary local monthly rainfall data (sourced from Prospect Reservoir AMO weather station 67019. Source: BoM (2021))

The Prospect Reservoir rainfall record was used due to the long record available (134 years). The local records for BoM stations at Orchard Hills and Badgerys Creek commence in 1970 and 1995, respectively. To the west, Springwood Bowling Club also has a 134-year record but shows a greater inter-annual variance due to the orographic effect of the adjacent Great Dividing Range (Figure 4-2).

Figure 4-2 presents the total annual rainfall for the last 20 years (average 851 mm/year) for surrounding rainfall stations compared with the historic average rainfall (879 mm/year) from the Prospect Reservoir AMO weather station 67019. The orographic effect contributes to the region's generally warmer summers than the rest of Sydney and cooler winters and significant rainfall variability seen from east to west (compare Springwood record in the west to the Prospect Reservoir record in the east in Figure 4-2).

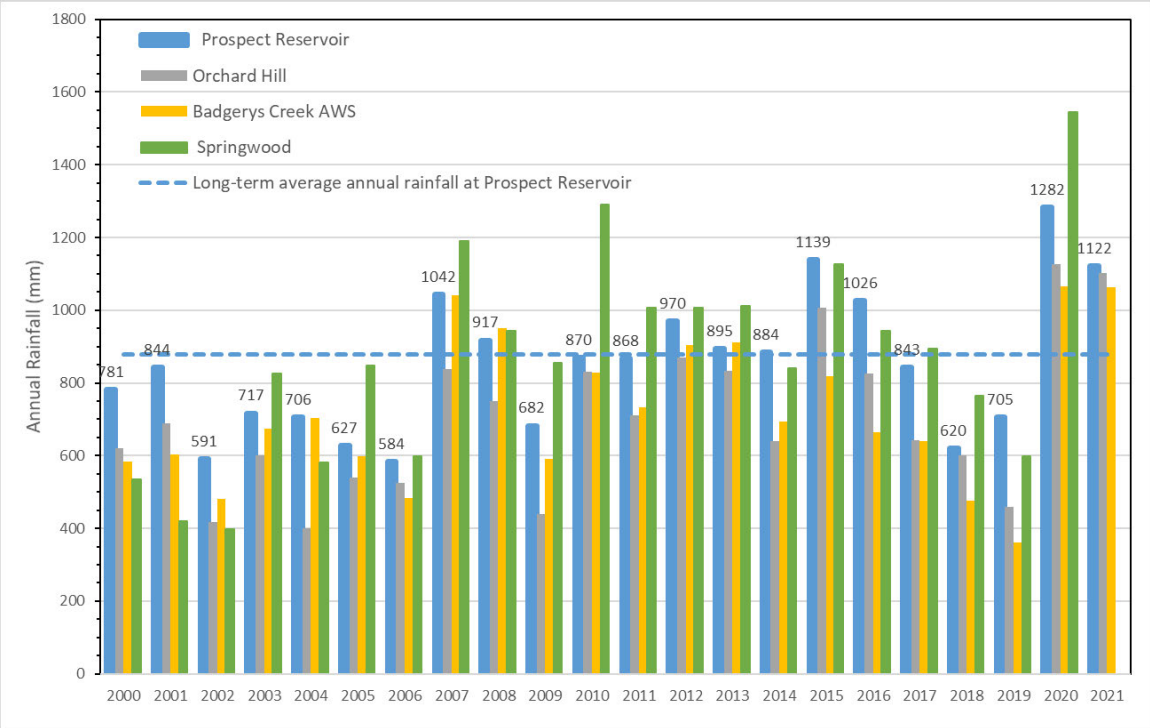


Figure 4-2: Annual rainfall (2000 to 2021) for local rainfall stations compared to long-term average annual rainfall (1887 – 2021) at Prospect Reservoir AMO weather station 67019. Source: BoM (2021))

The long-term cumulative rainfall deviation from the mean for Prospect Reservoir (Figure 4-3) shows the region has undergone alternating drier and wetter periods, with drier periods defined as 20-25% drier than wet periods. Currently, we appear to be experiencing a wetter climate for the region.

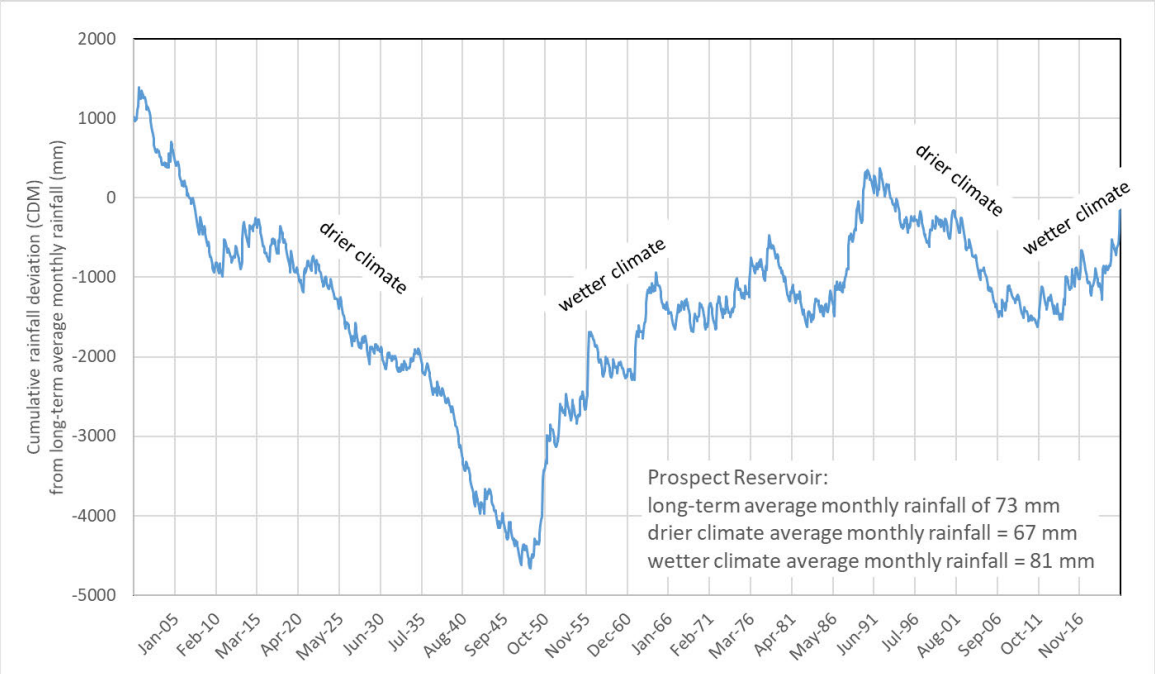


Figure 4-3: Cumulative rainfall deviation from the long-term monthly average rainfall at Prospect Reservoir

4.2 Definition of baseline assessment phase

Groundwater data collected prior to excavation below the groundwater table commencing is considered to represent baseline conditions.

Groundwater conditions across the seven groundwater monitoring zones as of 10 May 2023 is summarised in Table 4-1: Phase of SBT Works as of 10 May 2023. The end of the baseline assessment phase is based on where the current construction plan indicates that excavation below the water table may have commenced.

Table 4-1: Phase of SBT Works as of 10 May 2023

Zone	Groundwater condition as of 10 May 2023 [1]	Adopted end of baseline assessment phase
St Marys Station	Baseline conditions	N/A – not yet commenced
Claremont Meadows Facility	Construction conditions	17 March 2023
Orchard Hills Station	Construction conditions	16 December 2022
Airport Portal Dive	Construction conditions	14 February 2023
Airport Terminal Station	Construction conditions	1 March 2023
Bringelly Services Facility	Construction conditions	17 January 2023
Aerotropolis Core Station	Construction conditions	2 March 2023
Cross Passages	Baseline Conditions	Post TBM

1. Based on CPBG construction plan provided 4 May 2023

Where monitoring locations were unable to be installed before the end of the adopted baseline assessment phase, the distance from the excavation and predicted drawdown has been reviewed, and where appropriate the results have been included in the dataset used to inform baseline conditions.

5 Groundwater monitoring network

The groundwater monitoring network included in the baseline assessment consisted of both historical monitoring bores installed by others (pre-award) and newly installed monitoring bores by CPBG JV (post-award).

Construction details for each monitoring bore nominated in the GMP for baseline monitoring and/or inclusion in the baseline groundwater dataset are summarised in the following sections. The locations of all monitoring bores are shown on Figures A1 to A10 in Annexure A.

5.1 Groundwater monitoring bores

Construction details of groundwater monitoring bores that were nominated in the GMP for monitoring as part of the baseline assessment are summarised in Table 5-1 and Table 5-2, along with the current status of these monitoring bores.

5.1.1 Groundwater monitoring bore installation

Groundwater monitoring bores installed by CPBG post-award have well IDs of “SBT-GW-XXXX”:

- SBT-GW-1XXX indicates installed from St Marys to Claremont Meadows Service Facility
- SBT-GW-2XXX indicates installed at Orchard Hills Station
- SBT-GW-3XXX indicates installed at Airport Terminal and Station
- SBT-GW-4XXX indicates installed from Bringelly Service Facility to Aerotropolis Station

Groundwater monitoring bores were constructed using 50 mm internal diameter uPVC casing with end cap, with 0.4 mm aperture machine slotted uPVC pipe of the same diameter used for the well screens. Clean graded 1 to 2 mm quartzose sand was used for the gravel pack across screen intervals.

The gravel pack for each standpipe piezometer was topped off with a bentonite seal. At the ground surface the standpipe installation was capped with either a monument or gatic cover flush with the surrounding surface.

Groundwater monitoring bores were developed following installation using a submersible pump or bailer. Measurements of field parameters (dissolved oxygen, pH, electrical conductivity, redox and temperature) were recorded at regular intervals during development using a calibrated water quality meter. Visual observations of sediment content (turbidity) and yield were also noted. Development continued for a minimum of three bore volumes, and/or until the monitoring bore was dry.

All new monitoring locations were surveyed by CPBG for co-ordinates in GDA2020, and top of casing (TOC) elevations in mAHD. All available survey data is included in **Error! Reference source not found.**, with borelogs provided in Annexure B.

Table 5-1: Construction details and status of existing groundwater monitoring bores nominated for baseline monitoring

Well ID	Alternate ID	Monitoring Zone	Current Well Status	Aquifer	Easting	Northing	TOC Elevation (mAHD)	Screen Interval (mBGL)	Screen Interval (mAHD)	Comment
MW02	-	Aerotropolis	Existing	Unknown	291241.0	6243734.0	61.5	3 - 6	55.5 - 58.5	
MWO1	-	Aerotropolis	Existing	Unknown	290928.0	6244381.0	68.1	3 - 6	62.1 - 65.1	
SBT-GW-4803	-	Aerotropolis	Existing	Bedrock	NK	NK	NK	5 - 11	NK	Installed to replace SMGW-BH-D310
SMGW-BH-D109S	-	Aerotropolis	Existing	Bedrock	290715.8	6243821.2	72.4	5.95 - 8.95	63.45 - 66.45	
SBT-GW-4010	-	Aerotropolis - Bringelly	Existing	Bedrock	290427.4	6244758.3	78.779	22 - 28	50.78 - 56.78	Added to program to replace SMGW-BH-D205
SBT-GW-4014	SBT-GW-4014_S	Aerotropolis Station	Existing	Residual/Bedrock	290632.2	6243966.3	NK	5 - 14	NK	
SBT-GW-4017	-	Aerotropolis Station	Existing	Residual	290805.8	6243870.8	71.334	2 - 12	59.3 - 61.3	
SBT-GW-4019	SBT-BH-4019	Aerotropolis Station	Existing	Bedrock	290669.6	6243885.0	75.875	20 - 30	45.9 - 55.9	
SBT-GW-4021	-	Aerotropolis Station	Existing	Alluvium/Bedrock	291112.5	6243748.0	62.847	2 - 11	51.9 - 60.9	
BH-D-175	-	Airport Dive Portal	Unknown condition	Unknown	289796.0	6248515.0	81.4	NK	NK	Airport Land - Access pending
SBT-GW-3006	SBT-BH-3006, SBT-GW-3006_w	Airport Terminal	Existing	Bedrock	289368.0	6247844.4	84.305	29 - 35	49.3 - 55.3	
SBT-GW-3012-A	-	Airport Terminal	Existing	Bedrock	289133.2	6247685.6	83.958	2 - 8	76 - 82	
SBT-GW-3012-B	-	Airport Terminal	Existing	Bedrock	289134.8	6247682.9	83.9	10 - 16	67.9 - 73.9	
SBT-GW-3012-C	-	Airport Terminal	Existing	Bedrock	289136.4	6247680.3	83.777	20 - 26	57.8 - 63.8	
SBT-GW-3022	-	Airport Terminal	Existing	Bedrock	289446.1	6247614.1	77.776	3 - 15	62.8 - 74.8	
SMGW-BH-0001S	-	Badgerys Creek	Unknown condition	Unknown	288970.0	6246102.0	67	2 - 4	63 - 65	Airport Land - Access pending
SMGW-BH-0002	-	Badgerys Creek	Unknown condition	Unknown	288852.0	6246085.0	66.8	6 - 15	51.8 - 60.8	Airport Land - Access pending
SBT-GW-4003	-	Bringelly SF	Existing	Residual/Bedrock	289518.7	6245851.2	71.932	2 - 7	64.9 - 69.9	
SBT-GW-4005	SBT-BH-4005	Bringelly SF	Existing	Bedrock	289666.8	6245749.6	73.613	10 - 20	53.6 - 53.6	
SBT-GW-4800	-	Bringelly SF	Existing	Residual/ Bedrock	NK	NK	NK	2 - 7	NK	Installed to replace SBT-GW-4002

Well ID	Alternate ID	Monitoring Zone	Current Well Status	Aquifer	Easting	Northing	TOC Elevation (mAHD)	Screen Interval (mBGL)	Screen Interval (mAHD)	Comment
SBT-GW-4801	-	Bringelly SF	Existing	Residual/ Bedrock	NK	NK	NK	4 - 16	NK	Installed to replace SBT-GW-4020
SBT-GW-4802	-	Bringelly SF	Existing	Bedrock	NK	NK	NK	4 - 16	NK	Installed to replace SBT-GW-4022
SBT-GW-1024	-	Claremont Meadows SF	Existing	Alluvium/Bedrock	292108.9	6261303.0	NK	3 - 12	NK	
SBT-GW-1805		Claremont Meadows SF	Existing	Residual	292046.7	6261326.1	27.296	3 - 9	18.3 - 24.3	Installed to replace SMGW-BH-A109S
SMGW-BH-A122	-	Claremont Meadows SF	Existing	Bedrock	291893.0	6260308.0	41.4	25 - 35	6.4 - 16.4	
SBT-GW-4008	SBT-BH-4008	Cross passage / Tunnel	Existing	Bedrock	290230.0	6244991.9	78.269	NK	NK	
SBT-CM-1030	SBT-GW-1030	Cross passage / Tunnel (XPN13)	Existing	Residual/Bedrock	291923.5	6260911.5	36.807	2 - 6	30.8 - 34.8	
SBT-GW-1031	-	Cross passage / Tunnel (XPN14)	Existing	Bedrock	291872.1	6260654.0	40.808	15 - 20	20.8 - 25.8	
SMGW-BH-B120	-	Luddenham Road	Existing	Bedrock	290964.0	6253779.0	52.6	5 - 14	38.6 - 47.6	
SMGW-BH-B123	-	Luddenham Road	Existing	Bedrock	290939.0	6253035.0	57.2	5 - 14	43.2 - 52.2	
BH207	-	M12	Existing	Unknown	292342.0	6251217.0	40	5.9 - 17.9	22.1 - 34.1	
BH209	-	M12	Existing	Unknown	292587.0	6251246.0	39.4	0.5 - 18.2	21.2 - 38.9	
SBT-GW-1806		Orchard Hills	Existing	Bedrock	291755.3	6258999.8	42.957	15 - 24	19 - 28	Installed to replace SMGW-BH-A017
SBT-GW-1807		Orchard Hills	Existing	Bedrock	291901.4	6258843.1	37.479	10 - 16	21.5 - 27.5	Installed to replace SMGW-BH-A117
SBT-GW-1808		Orchard Hills	Existing	Residual	291902.3	6258845.2	37.455	2 - 5	32.5 - 35.5	Installed to replace SMGW-BH-A117S
SMGW-BH-A315	-	Orchard Hills	Existing	Residual/Bedrock	291726.6	6258863.8	42.28	4 - 10	32.28 - 38.28	
SMGW-BH-B317	-	Orchard Hills	Existing	Residual/Bedrock	291440.3	6254935.2	44.23	1.5 - 4.5	39.73 - 42.73	Department of Defence - Requires defence access
SMGW-BH-B319	-	Orchard Hills	Existing	Residual/Bedrock	291172.9	6254263.9	50.02	1.8 - 4.8	45.22 - 48.22	
SBT-GW-1037	SBT-GW-1037_S	Orchard Hills Station	Existing	Residual/Bedrock	291757.7	6259320.6	40.544	2 - 8	32.5 - 38.5	
SBT-GW-1042	-	Orchard Hills Station	Existing	Alluvium	291874.7	6259123.7	40.069	2 - 8	32.1 - 38.1	
SBT-GW-1043	SBT-GW-1043_S	Orchard Hills Station	Existing	Alluvium/Bedrock	291876.5	6259087.8	39.631	2 - 8	31.63 - 37.63	

Well ID	Alternate ID	Monitoring Zone	Current Well Status	Aquifer	Easting	Northing	TOC Elevation (mAHD)	Screen Interval (mBGL)	Screen Interval (mAHD)	Comment
SBT-GW-1048	-	Orchard Hills Station	Existing	Alluvium/Bedrock	291955.6	6259007.4	39.642	2 - 8	31.6 - 37.6	
SBT-GW-1063	-	Orchard Hills Station	Existing	Alluvium/Bedrock	292193.5	6258861.3	31.558	2 - 11	20.6 - 29.6	
SBT-GW-3003-A	SBT-GW-3003	Portal / Cross passage XPS01	Existing	Bedrock	290425.6	6248380.7	67.706	2 - 5	62.7 - 65.7	
SBT-GW-3003-B	SBT-GW-3004	Portal / Cross passage XPS01	Existing	Bedrock	290424.6	6248382.2	67.378	10 - 13	54.4 - 57.4	
SBT-GW-3003-C	SBT-GW-3005	Portal / Cross passage XPS01	Existing	Bedrock	290423.4	6248384.0	67.328	19 - 22	45.3 - 48.3	
MW1	BH1, MW-1	St Marys	Existing	Unknown	293889.0	6261976.0	NK	4.3 - 7.3	NK	
SBT-CM-1022	SBT-GW-1022	St Marys	Existing	Bedrock	293832.3	6261980.6	34.287	9 - 12	22.3 - 25.3	
SBT-GW-0001	-	St Marys	Existing	Unknown	NK	NK	NK	NK	NK	
SBT-GW-1001	SBT-GW-1001_S	St Marys	Existing	Residual/ Bedrock	294435.2	6261848.3	48.827	2 - 8	40.8 - 46.8	
SBT-GW-1002	-	St Marys	Existing	Residual/ Bedrock	294464.6	6261979.9	42.605	2 - 8	34.6 - 40.6	
SBT-GW-1005	SBT-GW1005_S	St Marys	Existing	Residual/ Bedrock	294262.4	6261825.2	44.195	2 - 8	36.2 - 42.2	
SBT-GW-1012	-	St Marys	Existing	Residual/ Bedrock	293930.5	6261971.2	35.361	2.5 - 7.5	27.86 - 32.86	
SBT-GW-1013	-	St Marys	Existing	Residual/ Bedrock	293931.4	6261964.9	35.398	2.5 - 7.5	27.90 - 32.90	
SBT-GW-1014	-	St Marys	Existing	Residual/ Bedrock	293931.8	6261959.4	35.471	2.5 - 7.5	27.89 - 32.89	
SBT-GW-1016	-	St Marys	Existing	Residual/ Bedrock	293905.8	6261847.7	36.122	5 - 10	26.1 - 31.1	
SBT-GW-1017	-	St Marys	Existing	Residual/ Bedrock	293646.1	6262114.9	32.475	2 - 8	22.5 - 30.5	
SBT-GW-1019R	SBT-GW-1019_r	St Marys	Existing	Bedrock	293888.3	6261978.7	35.196	13.9 - 18	17.2 - 21.3	
SBT-GW-1020	SBT-CM-1020	St Marys	Existing	Alluvium	293862.0	6261980.1	34.943	2 - 7	27.9 - 34.9	
SBT-GW-1021	-	St Marys	Existing	Residual/ Bedrock	293847.8	6262056.4	33.906	2 - 8	25.6 - 31.6	
SBT-GW-1803		St Marys	Existing	Bedrock	294375.8	6261850.4	47.649	16.5 - 25.5	22.2 - 31.2	Installed to replace SMGW-BH-A103

Well ID	Alternate ID	Monitoring Zone	Current Well Status	Aquifer	Easting	Northing	TOC Elevation (mAHD)	Screen Interval (mBGL)	Screen Interval (mAHD)	Comment
SMGW-BH-A401	-	St Marys	Existing	Residual/Bedrock	294106.3	6261998.0	-	NK	NK	Added to program to replace SBT-GW-1008
SMGW-GW01	GW01, GW-01	St Marys	Existing	Residual	293863.6	6261984.7	35.12	4.5 - 7.5	27.62 - 30.62	
SMGW-GW02	GW02, GW-02	St Marys	Existing	Residual	293887.3	6261984.0	35.39	5 - 8	27.39 - 30.39	
SMGW-BH-A107	-	TBM Tunnel - South Creek	Existing	Bedrock	292413.0	6261713.0	22.5	19 - 26	-7	
SBT-GW-4000	-	Western Sydney Airport	Existing	Bedrock	289140.5	6046360.3	72.235	2.5 - 13	59.24 - 69.74	Replaced SMGW-BH-C209 due to change in XP configuration, need WSA Co. induction
SMGW-BH-C206	-	Western Sydney Airport	Unknown condition	Bedrock	288838.3	6247416.3	81.61	21 - 27	54.61 - 60.61	Airport Land - Access pending
SMGW-BH-C207	-	Western Sydney Airport	Unknown condition	Bedrock	288773.1	6247042.2	88.76	29 - 38	50.76 - 59.76	Airport Land - Access pending
SMGW-BH-C303	-	Western Sydney Airport	Unknown condition	Residual/Bedrock	291075.3	6248861.4	60.15	1.5 - 5.5	54.65 - 58.65	Airport Land - Access pending
SMGW-BH-C320	-	Western Sydney Airport	Existing	Residual/Bedrock	289629.3	6246534.9	66.47	3 - 9	57.47 - 63.47	
SMGW-BH-C321	-	Western Sydney Airport	Existing	Residual/Bedrock	289808.6	6246630.0	63.45	1.5 - 6	57.45 - 61.95	
SMGW-BH-C324	-	Western Sydney Airport	Existing	Residual/Bedrock	289732.8	6246812.8	67.78	4 - 10	57.78 - 63.78	
SMGW-BH-C330	-	Western Sydney Airport	Existing	Bedrock	289535.1	6246506.5	69.35	3 - 9	60.35 - 66.35	
SMGW-BH-C332	-	Western Sydney Airport	Existing	Bedrock	289459.4	6247135.2	81.83	4 - 9	72.83 - 77.83	
1990_Coff_D10	-	WSI	Unknown condition	Bedrock	289886.0	6248066.0	88	0 - 10	78 - 88	Airport Land - Access pending
1990_Coff_D5	-	WSI	Unknown condition	Bedrock	288261.0	6247663.0	102.5	0 - 20.5	82 - 102.5	Airport Land - Access pending
1990_Coff_D6	-	WSI	Unknown condition	Bedrock	287900.0	6246723.0	112.9	0 - 25.1	87.8 - 112.9	Airport Land - Access pending
1990_Coff_D7	-	WSI	Unknown condition	Bedrock	288258.0	6246085.0	79.4	0 - 10.35	69.05 - 79.4	Airport Land - Access pending
1990_Coff_D9	-	WSI	Unknown condition	Bedrock	289591.0	6247340.0	87.5	0 - 10.25	77.25 - 87.5	Airport Land - Access pending
BH-C-01	-	WSI	Unknown condition	Alluvium	287923.0	6247697.0	54.2	0.5 - 5	49.2 - 53.7	Airport Land - Access pending
BH-D-174	-	WSI	Unknown condition	Unknown	290297.0	6249365.0	81.6	NK	NK	Airport Land - Access pending

Well ID	Alternate ID	Monitoring Zone	Current Well Status	Aquifer	Easting	Northing	TOC Elevation (mAHD)	Screen Interval (mBGL)	Screen Interval (mAHD)	Comment
BH-R-34	-	WSI	Unknown condition	Bedrock	288713.0	6246218.0	71.1	4 - 10	61.1 - 67.1	Airport Land - Access pending
BH-R-42	-	WSI	Unknown condition	Bedrock	289880.0	6247019.0	81.3	18 - 24	57.3 - 63.3	Airport Land - Access pending
F Deep	-	WSI	Unknown condition	Bedrock	288859.0	6245870.0	69.9	27.3 - 30.3	39.6 - 42.6	Airport Land - Access pending
F Shallow	-	WSI	Unknown condition	Residual	288859.0	6245870.0	69.9	3 - 6	63.9 - 66.9	Airport Land - Access pending
K	-	WSI	Unknown condition	Bedrock	289587.0	6248317.0	72	29.3 - 32.3	39.7 - 42.7	Airport Land - Access pending
WSA GW0S	WSA GW05	WSI	Unknown condition	Unknown	288574.0	6246161.0	74	5 - 10	64 - 67	Airport Land - Access pending

Table 5-2: Construction details and status of inactive groundwater monitoring bores nominated for baseline monitoring

Well ID	Alternate ID	Monitoring Zone	Current Well Status	Aquifer	Easting	Northing	TOC Elevation (mAHD)	Screen Interval (mBGL)	Screen Interval (mAHD)	Comment
BB01	-	Aerotropolis	Destroyed	Bedrock	290737.0	6243959.0	71.8	6 - 12	59.8 - 65.8	Destroyed by earthworks
BB02	-	Aerotropolis	Destroyed	Bedrock	290753.0	6243957.0	71.7	6 - 12	59.7 - 65.7	Destroyed by earthworks
BB03	-	Aerotropolis	Destroyed	Bedrock	290750.0	6243952.0	71.9	6 - 12	59.9 - 65.9	Destroyed by earthworks
BB114	-	Aerotropolis	Destroyed	Bedrock	290808.0	6244063.0	67.7	6 - 12	55.7 - 61.7	Destroyed in bulk earthworks
BB116	-	Aerotropolis	Unable to locate	Residual	291171.0	6244247.0	63.3	3 - 6	57.3 - 60.3	Unable to locate, suspect destroyed
SMGW-BH-D109	-	Aerotropolis	Destroyed	Bedrock	290714.9	6243825.3	72.6	11 - 20	52.6 - 61.6	Well lost - suspect destroyed
SMGW-BH-D310	-	Aerotropolis	Destroyed	Bedrock	290672.5	6244145.4	71.55	3 - 9	62.55 - 68.55	Destroyed by construction | Replaced by SBT-GW-4803
SMGW-BH-D205	-	Aerotropolis - Bringelly	Destroyed	Bedrock	290390.4	6244793.9	79.3	22 - 28	51.3 - 57.3	Well destroyed. Replaced with SBT-GW-4010
SMGW-BH-D206	-	Aerotropolis - Bringelly	Destroyed	Bedrock	290513.1	6244560.3	79.15	22 - 28	51.15 - 57.15	Destroyed by earthworks
SMGW-BH-D207	-	Aerotropolis - Bringelly	Destroyed	Bedrock	290718.0	6244026.4	70.13	8 - 11	59.13 - 62.13	Destroyed by earthworks
SMGW-BH-D208	-	Aerotropolis - Bringelly	Destroyed	Residual/Bedrock	290742.5	6243690.5	67.87	1 - 4.1	63.77 - 66.87	Destroyed by earthworks
SBT-GW-4020	-	Aerotropolis Station	Destroyed	Bedrock	NK	NK	NK	4 - 16	NK	Destroyed by earthworks
SBT-GW-4002	-	Bringelly SF	Destroyed	Bedrock	NK	NK	NK	2 - 7	NK	Destroyed by earthworks
SBT-GW-4022	-	Bringelly SF	Destroyed	Bedrock	289586.4	6245761.5	74.332	4 - 16	58.3 - 70.3	Destroyed by earthworks
SBT-GW-1028	SBT-GW-1028_S	Claremont Meadows SF	Unable to locate	Residual	292050.7	6261167.6	30.487	3 - 6	24.5 - 27.5	In asbestos exclusion zone
SMGW-BH-A109S	-	Claremont Meadows SF	Destroyed	Residual	292037.0	6261297.0	27.4	3.5 - 5	22.4 - 23.9	Destroyed by construction | Replaced by SBT-GW-1805
SMGW-BH-A121	-	Claremont Meadows SF	Destroyed	Bedrock	291944.0	6260883.0	38.6	15 - 21	17.6 - 23.6	Destroyed by earthworks
SMGW-BH-B130	-	Elizabeth Drive	Destroyed	Bedrock	291379.0	6250043.0	60.3	5 - 14	46.3 - 55.3	Destroyed by M12 construction
GW105054	-	Luddenham Rd - Orchard Hills	Removed	Unknown	291424.0	6256068.0	NK	NK	NK	Removed from program - 3rd party data available

Well ID	Alternate ID	Monitoring Zone	Current Well Status	Aquifer	Easting	Northing	TOC Elevation (mAHD)	Screen Interval (mBGL)	Screen Interval (mAHD)	Comment
GW105382	-	Luddenham Rd - Orchard Hills	Unable to locate	Unknown	291651.0	6255672.0	NK	NK	NK	Unable to locate
GW110454	-	Luddenham Rd - Orchard Hills	Removed	Unknown	290961.0	6256815.0	NK	NK	NK	Removed from program - 3rd party data available
GW110455	-	Luddenham Rd - Orchard Hills	Removed	Unknown	291628.0	6256774.0	NK	NK	NK	Removed from program - 3rd party data available
SMGW-BH-B308	-	Luddenham Rd - Orchard Hills	Removed	Residual	292032.7	6257200.4	34.82	1.2 - 4.2	30.62 - 33.62	Landowner permission denied
SMGW-BH-B309	-	Luddenham Rd - Orchard Hills	Removed	Residual	291835.5	6257202.7	35.63	0.9 - 5.4	30.23 - 34.73	Landowner permission denied
SMGW-BH-B106	-	Luddenham Road	Destroyed	Alluvium	291703.0	6256950.0	39.4	1 - 4	35.4 - 38.4	Well destroyed
SMGW-BH-B109	-	Luddenham Road	Destroyed	Bedrock	291572.0	6256049.0	41.5	9 - 13	28.5 - 32.5	Destroyed by construction
SMGW-BH-B121	-	Luddenham Road	Destroyed	Residual	290940.0	6253451.0	56.6	2 - 3	53.6 - 54.6	Well destroyed
BH117	-	M12	Destroyed	Unknown	291107.0	6251013.0	65.1	6.4 - 12.4	52.7 - 58.7	Destroyed in M12 construction.
BH119	-	M12	Destroyed	Unknown	291372.0	6249710.0	54	6.1 - 12.1	41.9 - 47.9	Destroyed in M12 construction.
BH05	-	Orchard Hills	Unable to Locate	Unknown	291691.0	6259715.0	56.6	6 - 9	47.6 - 50.6	Unable to Locate
BH09	-	Orchard Hills	Unable to Locate	Bedrock	291732.0	6259731.0	54.6	3 - 12	42.6 - 51.6	Unable to Locate
BH14	-	Orchard Hills	Removed	Bedrock	291788.0	6259692.0	49.6	6 - 9	40.6 - 43.6	Removed from program - requires TC Nightworks
BH17	-	Orchard Hills	Unable to Locate	Unknown	292165.0	6259690.0	50.9	6 - 9	41.9 - 44.9	Unable to Locate
SMGW-BH-A117S	-	Orchard Hills	Destroyed	Residual	291857.1	6258839.4	38.78	2.2 - 4.2	34.58 - 36.58	Destroyed by construction | Replaced by SBT-GW-1808
SMGW-BH-A017	-	Orchard Hills Station	Destroyed	Bedrock	291728.0	6258996.0	43.6	15 - 24	19.6 - 28.6	Destroyed by trenching works | Replaced by SBT-GW-1806
SMGW-BH-A117	-	Orchards Hill Station	Destroyed	Bedrock	291855.0	6258838.0	38.9	10 - 16	22.9 - 28.9	Destroyed by construction | Replaced by SBT-GW-1807
BH1	-	St Marys	Destroyed	Residual	293870.0	6261971.0	35.5	3 - 6	29.5 - 32.5	Unable to Locate
MW2	-	St Marys	Unable to Locate	Unknown	293887.0	6261983.0	NK	4.3 - 7.3	NK	Unable to Locate
SBT-GW-1008	-	St Marys	Removed	-	-	-	-	-	-	Not installed. Replaced with SMGW-BH-A401
SBT-GW-1015	-	St Marys	Removed	-	-	-	-	-	-	Not installed. Replaced with SBT-GW-0001
SMGW-BH-A202	-	St Marys	Destroyed	Bedrock	293936.6	6261969.7	35.53	7.5 - 9.5	26.03 - 28.03	Well gatic removed and converted to storm water drain. Well to be decommissioned - replaced by new St Marys wells
SMGW-BH-A302	-	St Marys	Destroyed	Residual/Bedrock	293999.2	6261951.4	35.81	5.6 - 11.6	24.21 - 30.21	Destroyed in construction zone as part of cutting and filling works. To be replaced by additional St Marys wells
SMGW-BH-A107S	-	TBM Tunnel - South Creek	Unable to locate	Residual	292413.0	6261713.0	22.5	3 - 5	17.5 - 19.5	Unable to locate | Replaced by SBT-GW-1808
SMGW-BH-A103	-	TBM Tunnel - St Marys	Destroyed	Bedrock	294351.0	6261870.0	46.4	15 - 24	22.4 - 31.4	Destroyed by construction (paved road) | Replaced by SBT-GW-1803
SMGW-BH-A113	-	TBM Tunnel M4	Removed	Bedrock	291786.0	6259594.0	43.4	20 - 29	14.4 - 23.4	Removed from program - requires TC Nightworks
SMGW-BH-C201	-	Western Sydney Airport	Destroyed	Bedrock	290279.2	6248347.9	68.71	13.6 - 28.6	40.11 - 55.11	Destroyed by earthworks
SMGW-BH-C205SA	-	Western Sydney Airport	Destroyed	Residual/Bedrock	289204.9	6247729.9	77.7	2.5 - 5.5	72.2 - 75.2	Destroyed by earthworks
SMGW-BH-C208	-	Western Sydney Airport	Destroyed	Bedrock	288877.5	6246773.6	79.46	31.3 - 40.3	39.16 - 48.16	Destroyed by earthworks
SMGW-BH-C209	-	Western Sydney Airport	Removed	Bedrock	289127.8	6246455.3	75.44	20.2 - 29.2	46.24 - 55.24	Replaced by SBT-GW-4000 due to change in XP configuration.
1990_Coff_D12	-	WSI	Destroyed	Bedrock	291270.0	6249548.0	59	0 - 10.5	48.5 - 59	Destroyed by construction of Seymour White slip road.
1990_Coff_D13	-	WSI	Destroyed	Alluvium/Bedrock	290822.0	6248092.0	73.5	0 - 10.35	63.15 - 73.5	Well destroyed in bulk earth works
2018_JK_BH-D-161	-	WSI	Destroyed	Unknown	292042.0	6249246.0	48.2	45204	38.2 - 43.2	Destroyed in construction of leachate pond.

Well ID	Alternate ID	Monitoring Zone	Current Well Status	Aquifer	Easting	Northing	TOC Elevation (mAHD)	Screen Interval (mBGL)	Screen Interval (mAHD)	Comment
BH-C-05	-	WSI	Destroyed	Alluvium	291773.0	6248524.0	59.3	5 - 12	47.3 - 54.3	Destroyed by construction south of leachate pond.
BH-C-08	-	WSI	Destroyed	Bedrock	291569.0	6249582.0	57.6	4 - 12	45.6 - 53.6	Destroyed by construction of Seymour White slip road.
BH-R-01	-	WSI	Destroyed	Bedrock	291387.0	6249658.0	55.7	14 - 20	35.7 - 41.7	Destroyed by Elizabeth drive upgrades.
BH-R-08	-	WSI	Destroyed	Bedrock	290643.0	6248549.0	61.5	24 - 30	31.5 - 37.5	Destroyed in bulk earthworks
BH-R-21	-	WSI	Destroyed	Bedrock	289222.0	6247676.0	78.6	12.5 - 18.5	60.1 - 66.1	Destroyed in bulk earthworks

Notes:

Dark grey shading denotes well destroyed and/ or wells removed from the program

Light grey shading denotes identified access issues

5.2 Grouted Vibrating Wire Piezometers (VWPs)

Grouted VWPs have been installed post-award at 45 locations by CPBG. Data loggers have been installed at 29 VWP locations. Construction details of post-award grouted VWPs is provided in Table 5-3 below.

Pre-award VWPs with groundwater level data relevant for the baseline assessment are summarised in Table 5-4.

Table 5-3: Construction details and status of post-award VWPs installed to 10 May 2023

Well ID	VWP Sensor ID	VWP Installation Date	As-built Easting	As-built Northing	Ground Surface Elevation (mAHD)	VWP Installation Depth (m)	VWP Instrument Elevations (mAHD)	Logger Installed
ABP-TD300-VWP01	ABP-TD300-VWP01	29/11/2022	290453.7	6248468.376	62.94	7.84	55.1	No
ABP-TD300-VWP02	ABP-TD300-VWP02	22/11/2022	290504.74	6248499.655	62.867	6.59	56.277	No
ABP-TD300-VWP03	ABP-TD300-VWP03	22/11/2022	290517.978	6248478.022	62.916	6.62	56.296	No
ABP-TD300-VWP04	ABP-TD300-VWP04	22/11/2022	290466.92	6248446.88	63.263	8.14	55.123	No
ATL-SN350-VWP01	ATL-SN350-VWP01-03	25/11/2022	289293.549	6247837.337	84.6	17.27	67.999	No
ATL-SN350-VWP01	ATL-SN350-VWP01-04	25/11/2022	289293.549	6247837.337	84.6	12.07	72.998	No
ATL-SN350-VWP01	ATL-SN350-VWP01-02	25/11/2022	289293.549	6247837.337	84.6	21.43	64.00	No
ATL-SN350-VWP01	ATL-SN350-VWP01-01	25/11/2022	289293.549	6247837.337	84.6	25.59	60.00	No
ATL-SN350-VWP02	ATL-SN350-VWP02-02	24/11/2022	289287.175	624777.06	82.504	19.69	64.00	No
ATL-SN350-VWP02	ATL-SN350-VWP02-03	24/11/2022	289287.175	624777.06	82.504	15.43	68.005	No
ATL-SN350-VWP02	ATL-SN350-VWP02-01	24/11/2022	289287.175	624777.06	82.504	23.95	59.998	No
SBT-GW-1001	SWD-TU100-17275-VWP01-B	06-05-22	294435.345	6261848.2	49.155	29	20.155	Yes
SBT-GW-1001	SWD-TU100-17275-VWP01-A	06-05-22	294435.345	6261848.2	49.155	34	15.155	Yes
SBT-GW-1005	SWD-TU100-17443-VWP03-B	28-07-22	294262.146	6261823.153	44.557	26	18.557	Yes
SBT-GW-1005	SWD-TU100-17443-VWP03-A	28-07-22	294262.146	6261823.153	44.557	31	13.557	Yes
SBT-GW-1028	SWD-TU100-20071-VWP07-B	26-05-22	292050.01	6261167.99	30.813	23	7.813	Yes
SBT-GW-1028	SWD-TU100-20071-VWP07-A	26-05-22	292050.01	6261167.99	30.813	28	2.813	Yes
SBT-GW-1037	SWD-TU150-21965-VWP01-A	04-08-22	291758.78	6259323.566	39.597	23	16.597	Yes
SBT-GW-1037	SWD-TU150-21965-VWP01-B	04-08-22	291758.78	6259323.57	39.597	18	21.597	Yes

Well ID	VWP Sensor ID	VWP Installation Date	As-built Easting	As-built Northing	Ground Surface Elevation (mAHD)	VWP Installation Depth (m)	VWP Instrument Elevations (mAHD)	Logger Installed
SBT-GW-1043	SWD-TU150-22193-VWP05-B	09-08-22	291875.98	6259094.91	39.499	14	25.499	Yes
SBT-GW-1043	SWD-TU150-22193-VWP05-A	09-08-22	291875.98	6259094.91	39.499	19	20.499	Yes
SBT-GW-4014	SWD-TU400-39565-VWP04-B	01-08-22	290629.58	6243965.784	73.749	23	50.749	Yes
SBT-GW-4014	SWD-TU400-39565-VWP04-A	01-08-22	290629.58	6243965.784	73.749	26	47.749	Yes
SBT-VWP-1400	SWD-TU100-17351-VWP02	04-11-22	294366.525	6261900.999	37.671	22.95	14.721	Yes
SBT-VWP-1401	SWD-TU100-17720-VWP04	05-08-22	294001.373	6261933.76	36.407	23	13.407	Yes
SBT-VWP-1402	SWD-TU100-19957-VWP05-03	18/11/2022	292049.655	6261277.908	26.872	9.37	17.502	No
SBT-VWP-1402	SWD-TU100-19957-VWP05-01	18/11/2022	292049.655	6261277.908	26.872	20.87	6.002	No
SBT-VWP-1402	SWD-TU100-19957-VWP05-02	18/11/2022	292049.655	6261277.908	26.872	15.87	11.002	No
SBT-VWP-1403	SWD-TU100-19992-VWP06-01	21/11/2022	292018.325	6261280.667	26.948	20.95	5.998	No
SBT-VWP-1403	SWD-TU100-19992-VWP06-03	21/11/2022	292018.325	6261280.667	26.948	9.45	17.498	No
SBT-VWP-1403	SWD-TU100-19992-VWP06-02	21/11/2022	292018.325	6261280.667	26.948	15.95	10.998	No
SBT-VWP-1404	SWD-TU150-22010-VWP02	05-08-22	291860.78	6259289.87	38.81	16	22.81	Yes
SBT-VWP-1405	SWD-TU150-22115-VWP03	16-06-22	291809.067	6259171.241	39.582	16	23.582	Yes
SBT-VWP-1406	SWD-TU150-22120-VWP04	19-08-22	291856.086	6259233.73	36.429	14.5	21.929	Yes
SBT-VWP-1407	SWD-TU150-22205-VWP06	10-08-22	291885.105	6259049.024	40.28	16	24.28	Yes
SBT-VWP-1408	SWD-TU150-22333-VWP07	11-08-22	291819.183	6258954.041	40.795	16	24.795	Yes
SBT-VWP-3400	SWD-TU300-33586-VWP01	02-08-22	290421.721	6248468.383	65.723	15	50.723	Yes
SBT-VWP-3401	SWD-TU300-33565-VWP02	08-08-22	290542.13	6248450.48	67.466	15	52.466	Yes
SBT-VWP-4400	SWD-TU351-37371-VWP04	21-06-22	289609.955	6245825.35	71.313	21	50.313	Yes

Well ID	VWP Sensor ID	VWP Installation Date	As-built Easting	As-built Northing	Ground Surface Elevation (mAHD)	VWP Installation Depth (m)	VWP Instrument Elevations (mAHD)	Logger Installed
SBT-VWP-4401	SWD-TU351-37377-VWP05	16-06-22	289570.224	6245793.485	73.53	21	52.53	Yes
SBT-VWP-4402	SWD-TU351-37471-VWP-06	20-06-22	289666.835	6245755.187	73.516	21	52.516	Yes
SBT-VWP-4403	SWD-TU400-39287-VWP01	12-08-22	290678.796	6244221.516	72.636	15.13	57.506	Yes
SBT-VWP-4404	SWD-TU400-39340-VWP02	12-08-22	290713.235	6244100.059	71.031	15.2	55.831	Yes
SBT-VWP-4405	SWD-TU400-39532-VWP03	10-08-22	290633.338	6244057.273	73.797	18.63	55.167	Yes
SBT-VWP-4406	SWD-TU400-39606-VWP05	28-07-22	290746.98	6243921.43	72.535	28	44.535	Yes

Table 5-4: Pre-award VWPs with level data

Location description	VWP ID	Easting MGA2020	Northing MGA2020	Stratigraphic unit	VWP sensor elevation (mbgl)	VWP sensor elevation (mAHD)	Ground surface level (mAHD)
St Marys	SMGW-BH-A001	293993	6262029	Residual	8	26.4	34.4
St Marys	SMGW-BH-A001	293993	6262029	Bedrock	18	16.4	34.4
St Marys	SMGW-BH-A001	293993	6262029	Bedrock	26	8.4	34.4
St Marys	SMGW-BH-A001	293993	6262029	Bedrock	31	3.4	34.4
South Creek	SMGW-BH-A011	292889	6262062	Residual	5.5	14.6	20.1
South Creek	SMGW-BH-A011	292889	6262062	Bedrock	10.5	9.6	20.1
South Creek	SMGW-BH-A011	292889	6262062	Bedrock	23.5	-3.4	20.1
South Creek	SMGW-BH-A011	292889	6262062	Bedrock	30	-9.9	20.1

Location description	VWP ID	Easting MGA2020	Northing MGA2020	Stratigraphic unit	VWP sensor elevation (mbgl)	VWP sensor elevation (mAHD)	Ground surface level (mAHD)
Orchard Hills	SMGW-BH-A115	291729	6259341	Bedrock	7	33.4	40.4
Orchard Hills	SMGW-BH-A115	291729	6259341	Bedrock	18	22.4	40.4
Orchard Hills	SMGW-BH-A115	291729	6259341	Bedrock	21	19.4	40.4
St Marys	SMGW-BH-A300	294474	6261885	Residual	4.3	33.9	38.2
St Marys	SMGW-BH-A300	294474	6261885	Bedrock	20.1	18.1	38.2
Luddenham Road	SMGW-BH-B122	290940	6253280	Bedrock	4	55.0	59
Luddenham Road	SMGW-BH-B122	290940	6253280	Bedrock	20	39.0	59
WSI	SMGW-BH-C111	289292	6246221	Alluvium	6.4	59.4	65.8
WSI	SMGW-BH-C111	289292	6246221	Bedrock	13.9	51.9	65.8
WSI	SMGW-BH-C111	289292	6246221	Bedrock	21.9	43.9	65.8
Derwent Road	SMGW-BH-D103	289676	6245697	Bedrock	10	64.7	74.7
Derwent Road	SMGW-BH-D103	289676	6245697	Bedrock	25	49.7	74.7
Derwent Road	SMGW-BH-D103	289676	6245697	Bedrock	40	34.7	74.7
Aerotropolis	SMGW-BH-D209	290782	6243299	Residual	6.5	58.3	64.8
Aerotropolis	SMGW-BH-D209	290782	6243299	Bedrock	14.2	50.6	64.8
Aerotropolis	SMGW-BH-D209	290782	6243299	Bedrock	26	38.8	64.8

6 Groundwater monitoring methodology

6.1 Groundwater level monitoring

6.1.1 Manual groundwater level measurements

Manual gauging to measure groundwater levels was undertaken on groundwater monitoring bores prior to sampling for groundwater quality between November 2022 and 10 May 2023.

Gauging was conducted using an electronic groundwater level interface meter from a known (surveyed) point at the top of the bore casing. Measurements were recorded to the nearest mm, and recorded as metres below the top of casing (mBTOC). Where survey data has been provided by CPBG, the groundwater level data has been corrected to Australian Height Datum (mAHD).

A summary of all available manual gauging data collected post award to inform the baseline assessment is included in the tables in Annexure D. Baseline groundwater contours based on currently available data are presented in Section 8.

6.1.2 Continuous groundwater level measurement

Groundwater level monitoring of monitoring bores installed by CPBG is undertaken using VWPs for both monitoring bores and grouted VWP configurations. For grouted VWPs one or more VWP sensors were installed at each location as detailed in Table 5-5 of the GMP.

Telemetered monitoring of groundwater level data associated with the VWPs is hosted by CPBG.

6.2 Groundwater quality monitoring

Groundwater monitoring bores sampled to inform baseline groundwater quality were collected in appropriate laboratory supplied bottles and sent to a National Association of Testing Authorities (NATA) accredited laboratory for analysis under the Chain of Custody (COC) process.

6.2.1 Sampling procedure

Groundwater sampling was conducted by suitably qualified and experienced personnel.

Prior to sampling for water quality, groundwater levels were manually gauged (refer Section 6.1.1).

Water quality parameters were measured using a calibrated field water quality meter, and digitally recorded in the field using an in-house GIS application.

Groundwater Samples were collected using the Hydrasleeve™ method. A Hydrasleeve captures a core of water, typically 1 litre, from the screened interval of the well. The Hydrasleeve™ is deployed to a target depth based on screened interval and rationale for sampling, and left until conditions are considered to have stabilised. The time to stabilisation depends on the transmissivity of the aquifer, with more transmissive aquifer stabilising more rapidly. Typically at least 5 days was allowed for stabilisation, which is considered appropriate given many bores are screened within the bedrock aquifer.

The Hydrasleeve™ is sealed except during sample collection when it is pulled up through the sampling interval, and re-seals once full. Therefore, only groundwater from the target depth interval is sampled and recovered.

For analysis of volatile organic compounds (VOCs), to reduce volatile losses samples were collected as rapidly as practicable with minimal agitation and zero headspace in sample bottles. Samples were submitted as soon as practicable to the laboratories to prevent loss while in storage or transit, and analysed within recommended holding times.

Sample containers were placed directly into an ice filled cooler and transported to the NATA-accredited laboratories under COC processes. Samples are required to be documented as received by the laboratory chilled and intact.

Groundwater sampling and field testing was carried out in both pre and post-award groundwater monitoring wells as detailed in Appendix A of the GMP, where sampling locations were accessible (refer Table 5-1).

Groundwater quality samples collected from newly installed post-award monitoring bores were initially tested for a comprehensive analytical suite (Table 6-1) with the analytical suite reviewed and refined based on the initial results. All pre and post-award locations sampled were analysed for the reduced analytical suite at a minimum (Table 6-1).

Table 6-1: Analytical schedule for monitoring bores

Program	Analysis suites
Comprehensive Analytical Suite	General indicators (pH, electrical conductivity (EC), total dissolved solids (TDS))
	Total Organic Carbon (TOC)
	Major cations (calcium, magnesium, sodium, potassium)
	Major anions (chloride, sulphate) and speciated alkalinity (bicarbonate, carbonate, hydroxide)
	Dissolved metals (aluminium, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, zinc) and total metals (aluminium, cobalt, iron, manganese)
	Nutrients (ammonia, nitrate, nitrite, total kjeldahl nitrogen, total nitrogen, total phosphorous, reactive phosphorous)
	Total Recoverable Hydrocarbons (TRH)
	Benzene, Toluene, Ethylbenzene, Xylene (BTEX)
	Monocyclic Aromatic Hydrocarbons (MAHs)
	Polycyclic Aromatic Hydrocarbons (PAHs)
	Volatile Organic Compounds (VOCs)
	Semi-Volatile Organic Compounds (SVOCs)
	Organochlorine Pesticides (OCPs)
	Organophosphorus pesticides (OPPs)
	Per- and Polyfluoroalkyl Substances (PFAS) (short suite)
Reduced Analytical Suite	General indicators (pH, EC, TDS)
	TOC
	Major cations (calcium, magnesium, sodium, potassium)
	Major anions (chloride, sulphate) and speciated alkalinity (bicarbonate, carbonate, hydroxide)
	Dissolved metals (aluminium, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, zinc) and total metals (aluminium, cobalt, iron, manganese)
	Nutrients (ammonia, nitrate, nitrite, total kjeldahl nitrogen, total nitrogen, total phosphorous, reactive phosphorous)
	TRH/ BTEXN
	MAH/ PAH

6.2.2 Decontamination

Decontamination of re-useable sampling equipment was conducted between each sampling location. Equipment was rinsed with tap water, cleaned with Liquinox (or equivalent), and underwent further rinsing with tap water then deionised water. Equipment was then allowed to dry before being used.

6.2.3 Quality assurance and quality control

Quality assurance (QA) and quality control (QC) measures during sampling and field data collection were undertaken to ensure data integrity as detailed in Section 7 of the GMP. In summary, the measures included:

- Use of NATA accredited laboratories for sample analysis;
- Use of Chain of Custody (CoC) procedures between sample collection in the field and subsequent reception of the sample by the laboratory. CoC documentation included the sample type and code, analysis required, collection data, sampler and sample receiver(s);
- Appropriate sample handling and storage including using laboratory supplied containers, keeping samples chilled during storage and transport, ensuring samples are received in good condition within specified holding times by the laboratory;
- A consistent program of quality control sampling was adopted for fieldwork, including:
    - Collection of duplicate and triplicate samples at an average frequency of one sample per twenty primary samples (an overall ratio of 1:10 where PFAS sampled in accordance with NEMP 2.0);
    - Collection of rinsate blanks to measure the effectiveness of decontamination procedures; and
    - Collection of trip blanks to assess the adequacy of sample storage and transport procedures in preventing cross contamination.

As detailed in Section 7.10 of the GMP, a data validation assessment has been completed of samples collected for the baseline assessment up to 10 May 2023, is included in Annexure F.

6.2.4 Recording and documentation of field results

Field results during monitoring were recorded on hard copy and digital field forms. Field forms detailed the following:

- Bore location and condition;
- Summary of climatic setting including weather and tide stage;
- Type of equipment used and equipment serial numbers;
- Method of sampling (Hydrasleeve deployment and retrieval dates);
- Details of the sampler;
- Field parameters, groundwater level, odour, colour and any other observations made during sampling; and
- Date and time of sampling.

Monitoring and sampling results recorded in the field were imported to the electronic data base for the project follow review.

6.2.5 Continuous electrical conductivity/ groundwater level monitoring

As detailed in Section 6.1 of the GMP, electrical conductivity (EC) and groundwater level data loggers will be used to continuously monitor conditions in select wells during the construction phase.

Installation of these data loggers has commenced, with current status summarised in Table 6-2.

Table 6-2: Status of groundwater bores to be monitored for EC and level during construction

Location	Area	Status
SMGW-BH-A105S	Cross passages	To be installed. Monitoring bore initially assumed to be lost or destroyed, but was identified on 16 May 2023.
SMGW-BH-A107	Cross passages	To be installed.
SBT-GW-1804	Cross passages	Original well SMGW-BH107S lost. Replacement part of re-drill Program with location optimised based on cross passage location.
SMGW-BH-A109S	Claremont Meadows	Installed
SBT-GW-1028	Claremont Meadows	Unable to access – asbestos exclusion zone. Option to used adjacent well installed by others being assessed. (*referred to as SBT-GW-1027 in Table 6-1 of GMP*)
SBT-GW-1042	Orchard hills	To be installed (*referred to as SBT-GW-1041 in Table 6-1 of GMP*)
SBT-GW-1063	Orchard hills	Installed
SMGW-BH-A315	Orchard hills	To be installed (*referred to as SBT-GW-1064 in Table 6-1 of GMP*)
SBT-GW-3006	Airport Terminal	Installed
SBT-GW-3003-A	Airport Terminal	To be installed (*referred to as SBT-GW-3012-A in Table 6-1 of GMP*)
SBT-GW-3003-B	Airport Terminal	To be installed (*referred to as SBT-GW-3012-B in Table 6-1 of GMP*)
SBT-GW-3003-C	Airport Terminal	To be installed (*referred to as SBT-GW-3022 in Table 6-1 of GMP*)
SMGW-BH-C209	Airport	Replaced by SBT-GW-4000 due to change in XP configuration.
SBT-GW-4000	Cross passages	Access from CPBG required. Added to program to replace SMGW-BH-C209.
SMGW-BH-D205	Aerotropolis	Well destroyed. Replaced by SBT-GW-4010
SBT-GW-4010	Aerotropolis	Installed. Added to program to replace SMGW-BH-D205.
SMGW-BH-D305	Aerotropolis	Private property (220 Badgerys Creek Rd) – access denied by landowner. Replaced by SBT-GW-4008.
SBT-GW-4008	Aerotropolis	Installed. Added to program to replace SMGW-BH-D305.

This data will be hosted by CPBG. Where available and appropriate, in the GMP review (refer Section 9) continuous EC and level monitoring data will be considered to inform site specific trigger values (SSTVs) for groundwater dependent ecosystem (GDE) locations as detailed in Table 6-2 of the GMP.

7 Compliance review

The baseline monitoring program outlined in Section 5 the GMP (refer to Section 3) has guided the monitoring undertaken for the baseline groundwater assessment (groundwater level and quality monitoring as of 10 May 2023).

A review of compliance against the GMP baseline monitoring program was undertaken, with departures from the proposed monitoring program discussed below and summarised in Table 7-1.

In summary, deviations from the proposed baseline groundwater monitoring program include:

- Stakeholder access denied, removed from program (7)
- Stakeholder access not yet approved (21)
- Unable to locate and suspected destroyed (10)
- Inaccessible due to asbestos exclusion zone (1)
- Groundwater well destroyed (30)
- Critical wells destroyed and to be replaced (11)
- Groundwater wells added to the program (13)

Eleven bores that were observed to be destroyed had been proposed for both baseline and on-going construction monitoring, and as such were considered critical wells. CPBG JV are currently undertaking a re-drill program to reinstall monitoring wells to meet the objectives of the proposed locations.

Two groundwater wells (SBT-GW-1008 and SBT-GW-1015) were not installed as existing monitoring bores (SMGW-BH-A401 and SBT-GW-0001 respectively) were identified in the vicinity of these two locations which would meet the required monitoring objectives.

The GMP identified 39 groundwater bores of unknown condition along the alignment. During the baseline assessment works, four of these groundwater bores were identified and samples collected. Of the remaining 35 bores, 24 wells have either been confirmed destroyed during bulk earthworks, or were unable to be located and are suspected destroyed. The remaining 11 wells will be accessed and their condition confirmed pending approval to access WSA Airport Land.

Implementation of the system to continuously monitor groundwater conditions during construction, as detailed in Section 6.1 of GMP is ongoing. Up to 10 May 2023, the majority of the effort has been focused on setting up the construction groundwater monitoring network near areas where construction activities are most advanced.

Table 7-1: Deviations from GMP baseline groundwater sampling plan

Well ID	Location/ Monitoring Zone	Confirmed Well Status	Comment
SMGW-BH-D310	Aerotropolis	Destroyed	Destroyed by construction | Replaced by SBT-GW-4803
BB01	Aerotropolis	Destroyed	Destroyed by earthworks
BB02	Aerotropolis	Destroyed	Destroyed by earthworks
BB03	Aerotropolis	Destroyed	Destroyed by earthworks
BB114	Aerotropolis	Destroyed	Destroyed in bulk earthworks
SBT-GW-4803	Aerotropolis	Existing	Installed to replace SMGW-BH-D310
BB116	Aerotropolis	Unable to locate	Unable to locate, suspect destroyed
SMGW-BH-D109	Aerotropolis	Destroyed	Well lost - suspect destroyed
SBT-GW-4010	Aerotropolis - Bringelly	Existing	Added to program to replace SMGW-BH-D205
SMGW-BH-D206	Aerotropolis - Bringelly	Destroyed	Destroyed by earthworks
SMGW-BH-D207	Aerotropolis - Bringelly	Destroyed	Destroyed by earthworks
SMGW-BH-D208	Aerotropolis - Bringelly	Destroyed	Destroyed by earthworks
SMGW-BH-D205	Aerotropolis - Bringelly	Destroyed	Well destroyed. Replaced with SBT-GW-4010
SBT-GW-4020	Aerotropolis Station	Destroyed	Destroyed by earthworks
SBT-GW-4022	Aerotropolis Station	Destroyed	Destroyed by earthworks
SBT-GW-4002	Bringelly Services Facility	Destroyed	Destroyed by earthworks
SBT-GW-4800	Bringelly Services Facility	Existing	Installed to replace SBT-GW-4002
SBT-GW-4801	Bringelly Services Facility	Existing	Installed to replace SBT-GW-4020
SBT-GW-4802	Bringelly Services Facility	Existing	Installed to replace SBT-GW-4022
SMGW-BH-A109S	Claremont Meadows Services Facility	Destroyed	Destroyed by construction | Replaced by SBT-GW-1805
SMGW-BH-A121	Claremont Meadows Services Facility	Destroyed	Destroyed by earthworks
SBT-GW-1028	Claremont Meadows Services Facility	Existing	In asbestos exclusion zone
SBT-GW-1805	Claremont Meadows Services Facility	Existing	Installed to replace SMGW-BH-A109S
SMGW-BH-B317	Department of Defence (Orchard Hills)	Existing	Requires defence access
SMGW-BH-B130	Elizabeth Drive	Destroyed	Destroyed by M12 construction
GW105054	Luddenham Rd - Orchard Hills	Unknown condition	Removed from program - 3rd party data available
GW110454	Luddenham Rd - Orchard Hills	Unknown condition	Removed from program - 3rd party data available
GW110455	Luddenham Rd - Orchard Hills	Unknown condition	Removed from program - 3rd party data available
GW105382	Luddenham Rd - Orchard Hills	Unable to locate	Unable to locate
SMGW-BH-B109	Luddenham Road	Destroyed	Destroyed by construction
SMGW-BH-B106	Luddenham Road	Destroyed	Well destroyed
SMGW-BH-B121	Luddenham Road	Destroyed	Well destroyed
BH117	M12	Destroyed	Destroyed in M12 construction.
BH119	M12	Destroyed	Destroyed in M12 construction.
SMGW-BH-A117S	Orchard Hills - Landsdowne Road	Destroyed	Destroyed by construction | Replaced by SBT-GW-1808
SMGW-BH-B308	Orchard Hills - Luddenham Road	Existing	Landowner permission denied
SMGW-BH-B309	Orchard Hills - Luddenham Road	Existing	Landowner permission denied
BH14	Orchard Hills - St Marys	Unknown condition	Removed from program - requires TC Nightworks
BH05	Orchard Hills - St Marys	Unable to Locate	Unable to Locate
BH09	Orchard Hills - St Marys	Unable to Locate	Unable to Locate
BH17	Orchard Hills - St Marys	Unable to Locate	Unable to Locate
SMGW-BH-A117	Orchards Hill	Destroyed	Destroyed by construction | Replaced by SBT-GW-1807
SMGW-BH-A017	Orchards Hill	Destroyed	Destroyed by trenching works | Replaced by SBT-GW-1806
SBT-GW-1806	Orchards Hill	Existing	Installed to replace SMGW-BH-A017
SBT-GW-1807	Orchards Hill	Existing	Installed to replace SMGW-BH-A117
SBT-GW-1808	Orchards Hill	Existing	Installed to replace SMGW-BH-A117S - Damaged - CPBG to re-instate
SMGW-BH-A361	St Marys	Existing	Added to address data gap
SBT-GW-0001b	St Marys	Existing	Added to meet Auditor requirements
SMGW-BH-A401	St Marys	Existing	Added to program to replace SBT-GW-1008
SMGW-BH-A302	St Marys	Destroyed	Destroyed in construction zone as part of cutting and filling works.
SBT-GW-1015	St Marys	Removed	Not installed. Replaced with SBT-GW-0001
SBT-GW-1008	St Marys	Removed	Not installed. Replaced with SMGW-BH-A401
BH1	St Marys	Destroyed	Unable to Locate
MW2	St Marys	Unable to Locate	Unable to Locate
SMGW-GW01	St Marys	Existing	Unable to Locate
SMGW-BH-A202	St Marys	Destroyed	Well destroyed – CPBG to confirm decommissioned
SMGW-BH-A113	TBM Tunnel - M4	Existing	Removed from program - requires TC Nightworks
SBT-GW-1804	TBM Tunnel - South Creek	To be Installed	To be installed to replace SMGW-BH-A107S
SMGW-BH-A107S	TBM Tunnel - South Creek	Unable to locate	Unable to locate | Replaced by SBT-GW-1808
SMGW-BH-A103	TBM Tunnel - St Marys	Destroyed	Destroyed by construction (paved road) | Replaced by SBT-GW-1803
SBT-GW-1803	TBM Tunnel - St Marys	Existing	Installed to replace SMGW-BH-A103
1990_Coff_D10	Western Sydney Airport	Unknown condition	Airport Land - Access pending
1990_Coff_D5	Western Sydney Airport	Unknown condition	Airport Land - Access pending
1990_Coff_D6	Western Sydney Airport	Unknown condition	Airport Land - Access pending
1990_Coff_D7	Western Sydney Airport	Unknown condition	Airport Land - Access pending
1990_Coff_D9	Western Sydney Airport	Unknown condition	Airport Land - Access pending
BH-C-01	Western Sydney Airport	Unknown condition	Airport Land - Access pending
BH-D-174	Western Sydney Airport	Unknown condition	Airport Land - Access pending
BH-D-175	Western Sydney Airport	Unknown condition	Airport Land - Access pending
BH-R-34	Western Sydney Airport	Unknown condition	Airport Land - Access pending
BH-R-42	Western Sydney Airport	Unknown condition	Airport Land - Access pending
F Deep	Western Sydney Airport	Unknown condition	Airport Land - Access pending
F Shallow	Western Sydney Airport	Unknown condition	Airport Land - Access pending

Well ID	Location/ Monitoring Zone	Confirmed Well Status	Comment
K	Western Sydney Airport	Unknown condition	Airport Land - Access pending
SMGW-BH-0001S	Western Sydney Airport	Unknown condition	Airport Land - Access pending
SMGW-BH-0002	Western Sydney Airport	Unknown condition	Airport Land - Access pending
SMGW-BH-C206	Western Sydney Airport	Unknown condition	Airport Land - Access pending
SMGW-BH-C207	Western Sydney Airport	Unknown condition	Airport Land - Access pending
SMGW-BH-C303	Western Sydney Airport	Unknown condition	Airport Land - Access pending
WSA GW0S	Western Sydney Airport	Existing	Airport Land - Access pending
1990_Coff_D12	Western Sydney Airport	Destroyed	Destroyed by construction of Seymour White slip road.
BH-C-08	Western Sydney Airport	Destroyed	Destroyed by construction of Seymour White slip road.
BH-C-05	Western Sydney Airport	Destroyed	Destroyed by construction south of leachate pond.
SMGW-BH-C201	Western Sydney Airport	Existing	Destroyed by earthworks
SMGW-BH-C205SA	Western Sydney Airport	Existing	Destroyed by earthworks
SMGW-BH-C208	Western Sydney Airport	Destroyed	Destroyed by earthworks
BH-R-01	Western Sydney Airport	Destroyed	Destroyed by Elizabeth drive upgrades.
BH-R-08	Western Sydney Airport	Destroyed	Destroyed in bulk earthworks
BH-R-21	Western Sydney Airport	Destroyed	Destroyed in bulk earthworks
2018_JK_BH-D-161	Western Sydney Airport	Destroyed	Destroyed in construction of leachate pond.
SMGW-BH-C209	Western Sydney Airport	Existing	Replaced by SBT-GW-4000 due to change in XP configuration.
SBT-GW-4000	Western Sydney Airport	Existing	Replaced SMGW-BH-C209 due to change in XP configuration, Airport Land - Access pending
1990_Coff_D13	Western Sydney Airport	Unknown condition	Well destroyed in bulk earth works

8 Groundwater Monitoring Results

8.1 Groundwater Levels

Baseline groundwater elevation contours have been developed using the average groundwater levels where manual gauging and associated survey data is available. Average groundwater levels used to develop the groundwater contour plans are provided in Table 8-1. Groundwater elevation plans are presented in Figure 8-1 to Figure 8-4, and all available post-award manual gauging data is included in groundwater results tables in Annexure D.

Table 8-1: Average Groundwater Levels under Baseline Conditions

Bore ID	Monitoring Zone / Location	Easting	Northing	Average Groundwater Level mAHD
1990_Coff_D1	WSI	286946	6246080	96.3
1990_Coff_D10	WSI	289886	6248066	83.3
1990_Coff_D12	WSI	291270	6249548	55.8
1990_Coff_D13	WSI	290822	6248092	70.5
1990_Coff_D2	WSI	287166	6247021	93.9
1990_Coff_D3	WSI	287405	6247370	102.3
1990_Coff_D4	WSI	287223	6247993	95.8
1990_Coff_D5	WSI	288261	6247663	98.6
1990_Coff_D6	WSI	287900	6246723	98.6
1990_Coff_D7	WSI	288258	6246085	75.4
1990_Coff_D9	WSI	289591	6247340	83.3
2018 JK_BH-D-166	WSI	288509	6248770	69.4
2018 JK_BH-D-167	WSI	286854	6247677	78.6
2018 JK_BH-D-200	WSI	286587	6247056	80.1
2018 JK_BH-FF-005	WSI	288831	6249104	66. 0
2018 JK_BH-FF-007	WSI	288438	6248996	66.2
2018 JK_BH-FF-010	WSI	288715	6248956	71. 0
2018_1K_131-1-D-163	WSI	291300	6247331	52.2
2018_1K_BH-D-164	WSI	290668	6246922	56.1
2018_JK_BH-D-161	WSI	292042	6249247	45.6
2018_JK_BH-D-162	WSI	291356	6247431	51.7
2018_JK_BH-D-165	WSI	289547	6249841	60. 0
A	Aerotropolis	288242	6244148	81.3
B	WSI	289679	6249319	61.8
BB114	Aerotropolis	290808	6244063	65.85
BB116	Aerotropolis	291171	6244247	58.36
BH05	OHE - St Marys	291691	6259715	54. 0
BH09	OHE - St Marys	291732	6259731	52.3
BH117	M12	291107	6251013	40.8
BH14	OHE - St Marys	291788	6259692	42. 0
BH17	OHE - St Marys	292165	6259690	46.5
BH202	M12	290090	6251219	48.23
BH204	M12	290177	6251196	49.21
BH207	M12	292342	6251217	36. 0
BH209	M12	292587	6251246	36.46

Bore ID	Monitoring Zone / Location	Easting	Northing	Average Groundwater Level mAHD
BH211	M12	293340	6251098	35.62
BH215	M12	293615	6251031	34.77
BH301	M12	292746	6251172	39.48
BH-C-01	WSI	287923	6247697	52.1
BH-C-03	WSI	291056	6247623	61.2
BH-C-04	WSI	291664	6247692	50.2
BH-C-05	WSI	291773	6248524	55.8
BH-C-08	WSI	291569	6249582	50.8
BHC-09	WSI	288919	6249088	66.9
BH-C-10	WSI	287235	6247279	91.4
BH-C-11	WSI	290577	6247021	64.7
BH-C-12	WSI	290835	6246927	55.3
BH-C-14	WSI	287173	6245520	88.8
BH-C-17	WSI	287923	6248537	90.5
BH-C-19	WSI	286920	6246754	89.5
BH-C-21	WSI	291816	6247862	51.3
BH-C-22	WSI	289520	6249556	59.4
BH-D-175 (11m)	WSI	289796	6248516	71.4
BH-R-01	WSI	291387	6249658	54.0
BH-R-08	WSI	290643	6248549	58.75
BH-R-21	WSI	289222	6247676	75.55
BH-R-34	WSI	288713	6246218	67.9
BH-R-42	WSI	289880	6247019	78.5
E Deep	WSI	287890	6244932	75.4
E Shallow	WSI	287890	6244932	77.5
F Deep	WSI	288859	6245870	66. 0
F Shallow	WSI	288859	6245870	77.5
G Deep	WSI	290793	6246827	54.6
G Shallow	WSI	290793	6246827	55. 0
H Deep	Aerotropolis	289197	6244455	81.1
H Shallow	Aerotropolis	289197	6244455	81.6
J Deep	Aerotropolis	290078	6242952	65.2
J Shallow	Aerotropolis	290078	6242952	67.2
K	WSI	289587	6248317	68.5
MW02	Aerotropolis	291241	6243734	57.6
MWO1	Aerotropolis	290928	6244381	64.22
SBT-CM-1022	St Marys	293832	6261981	32.78
SBT-GW-1001	St Marys Station	294435	6261848	43.09
SBT-GW-1002	St Marys Station	294465	6261980	39.356
SBT-GW-1005	St Marys Station	294262	6261825	37.018
SBT-GW-1012	St Marys Station	293930	6261971	32.96
SBT-GW-1013	St Marys Station	293931	6261965	32.943
SBT-GW-1014	St Marys Station	293932	6261959	32.995
SBT-GW-1016	St Marys Station	293906	6261848	33.617
SBT-GW-1019	St Marys Station	293888	6261978	33.049
SBT-GW-1021	St Marys Station	293848	6262056	32.408
SBT-GW-1028	Claremont Meadows SF	292051	6261168	26.723

Bore ID	Monitoring Zone / Location	Easting	Northing	Average Groundwater Level mAHD
SBT-GW-1031	Cross passage / Tunnel (XPN14)	291872	6260654	33.623
SBT-GW-1048	Orchard Hills Station	291956	6259007	33.807
SBT-GW-1063	Orchard Hills Station	292193	6258861	25.656
SBT-GW-3003_a	Airport terminal	290426	6248381	63.926
SBT-GW-3006_w	Airport terminal	289371	6247845	72.955
SBT-GW-3012_a	Airport terminal	289133	6247771	76.998
SBT-GW-3022	Airport terminal	289446	6247614	69.805
SBT-GW-4000	XP-S13	289140	6246360	70.937
SBT-GW-4003	Bringelly SF	289519	6245851	67.146
SBT-GW-4005	Bringelly SF	289667	6245750	67.493
SBT-GW-4008	Cross passage / Tunnel	290230	6244992	72.051
SBT-GW-4010	Portal / Cross passage XPS22	290427	6244758	73.776
SBT-GW-4017	Aerotropolis Station	290806	6243871	65.013
SBT-GW-4019	Aerotropolis Station	290670	6243885	67.122
SBT-GW-4021	Aerotropolis Station	291112	6243748	59.882
SBT-GW-4022	Aerotropolis Station	289586	6245762	67.71
SMGW-BH-0001S	Badgerys Creek	288970	6246102	67.7
SMGW-BH-A002	St Marys	294138	6261944	32.490
SMGW-BH-A012	Werrington - Lethbridge Avenue	291602	6262452	23.8
SMGW-BH-A017	Orchards Hill	291728	6258996	38.2
SMGW-BH-A019	Gipps Street	291953	6260516	37.6
SMGW-BH-A102	St Marys Station	294051	6261946	32.52
SMGW-BH-A103	TBM Tunnel - St Marys	293654	6262032	25.25
SMGW-BH-A105	TBM Tunnel - South Creek	293098	6262002	20.77
SMGW-BH-A107	TBM Tunnel - South Creek	292413	6261713	21.625
SMGW-BH-A107S	TBM Tunnel - South Creek	292413	6261713	21.51
SMGW-BH-A109	Claremont Meadows SF	292038	6261300	25.6
SMGW-BH-A109S	Claremont Meadows SF	292037	6261297	25.6
SMGW-BH-A111	TBM Tunnel - Gipps Street	291915	6260719	31.2
SMGW-BH-A113	TBM Tunnel M4	291786	6259594	32.19
SMGW-BH-A115-1	Orchard Hills Tunnel portal	291729	6259342	37.5
SMGW-BH-A117	Orchards Hill Station	291855	6258838	35.5
SMGW-BH-A121	Claremont Meadows	291944	6260883	32.37
SMGW-BH-A122	Claremont Meadows	291893	6260308	37.3
SMGW-BH-A300	St Marys	294474	6261884	37.
SMGW-BH-A302	St Marys Station	293999	6261951	32.5
SMGW-BH-A304	A302 Bus Interchange	292037	6261246	26. 0
SMGW-BH-A310	Kent Road	291737	6259192	37.3
SMGW-BH-A311	Kent Road	291738	6259051	39.78
SMGW-BH-A315	40-48 Landsdowne Rd, Orchard Hills	291727	6258864	38.68
SMGW-BH-A321	St Marys Station	294200	6261917	33. 0
SMGW-BH-A401	St Marys	294106.34	6261997.81	32.9
SMGW-BH-A402	St Marys	293911.60	6262068 9	34.3
SMGW-BH-A406	St Marys	294271.99	6261875.29	37.2

Bore ID	Monitoring Zone / Location	Easting	Northing	Average Groundwater Level mAHD
SMGW-BH-A408	Orchards Hill Station	291817.31	6259462.84	37.2
SMGW-BH-A412S	Orchards Hill Station	291865.19	6259125.60	36.5
SMGW-BH-A413	Orchards Hill Station	291827.94	6259066.53	37.5
SMGW-BH-A415	Orchards Hill Station	291846.92	6259047.66	37. 0
SMGW-BH-A416	Orchards Hill Station	291839.09	6258895.77	35.5
SMGW-BH-A417	Orchards Hill Station	291868.73	6258929.11	35. 0
SMGW-BH-A418	Orchards Hill Station	291851.65	6258745.33	36.5
SMGW-BH-A419	Orchards Hill Station	291888.21	6258663.17	33.6
SMGW-BH-B106	Luddenham Road	291703	6256950	37.41
SMGW-BH-B109	Luddenham Road	291572	6256049	38.2
SMGW-BH-B120	Luddenham Road Station	290964	6253779	49.67
SMGW-BH-B121	Luddenham Road Station	290940	6253451	53.5
SMGW-BH-B122-1	Luddenham Road Station	290940	6253281	55.3
SMGW-BH-B123	Luddenham Road	290939	6253035	52.15
SMGW-BH-B130	Elizabeth Drive	291379	6250043	57.73
SMGW-BH-B313	Department of Defence (DOD)	291504	6255514	36.73
SMGW-BH-B317	Department of Defence (DOD)	291440	6254935	40.96
SMGW-BH-B319	Orchard Hills - Warragamba pipeline	291173	6254264	46.831
SMGW-BH-B320	463A Luddenham Rd Luddenham	291041	6254012	45.93
SMGW-BH-B325	642 Luddenham Rd Luddenham	291331	6251967	44.55
SMGW-BH-C301	WSA CIZ	291370	6249349	50.61
SMGW-BH-C302	WSA CIZ	291326	6249157	52.15
SMGW-BH-C303	WSA CIZ	291075	6248861	56.06
SMGW-BH-C304	WSA CIZ	290945	6248669	60.85
SMGW-BH-C305	WSA CIZ	290762	6248715	59.98
SMGW-BH-C320	WSA NON-CIZ	289629	6246535	64.165
SMGW-BH-C321	WSA NON-CIZ	289809	6246630	62.805
SMGW-BH-C322	WSA NON-CIZ	289595	6246615	64.21
SMGW-BH-C324	WSA NON-CIZ	289733	6246813	66.97
SMGW-BH-C325	WSA NON-CIZ	289414	6246914	70.62
SMGW-BH-C330	WSA NON-CIZ	289535	6246507	66.68
SMGW-BH-C331	WSA NON-CIZ	289220	6247060	76.3
SMGW-BH-C332	WSA NON-CIZ	289459	6247135	76.59
SMGW-BH-C340	WSA NON-CIZ	291542	6248270	57.23
SMGW-BH-C341	WSA NON-CIZ	291848	6248251	49.99
SMGW-BH-C351	WSA NON-CIZ	290304	6247361	66.66
SMGW-BH-D103	Derwent Road	289676	6245698	69. 0
SMGW-BH-D109S	Aerotropolis	290716	6243821	67.5
SMGW-BH-D303S	40 Derwent Road Bringelly	289599	6245794	67.5
SMGW-BH-D305	220 Badgerys Creek Road Bringelly	290097	6245334	67.81
SMGW-BH-D308	Aerotropolis	290715	6243914	66.5
SMGW-BH-D310	Aerotropolis	290672	6244145	68. 0
SMGW-BH-D322	Aerotropolis	290677	6244060	67.5

Bore ID	Monitoring Zone / Location	Easting	Northing	Average Groundwater Level mAHD
SMGW-BH-D324	Aerotropolis	290695	6243992	66.91
SMGW-BH-D326	Aerotropolis	290704	6243892	66.43
SMGW-BH-D329	Aerotropolis	290720	6243765	68. 0
SMGW-BH-D403	Aerotropolis	290977.72	6242822.22	68. 0
SMGW-BH-D404	Aerotropolis	291138.86	6242702.34	70.4
SMGW-GW01	St Marys	293864	6261985	33.653
SMGW-GW02	St Marys	293887	6261984	33.235
WSA GW06	WSI	288413	6246761	78.7
WSA GW07	WSI	288413	6246761	82.9
WSA GW08	WSI	289013	6246245	66.9
WSA GW0S	WSI	288574	6246161	68.5
WSA GW14	WSI	290400	6246871	64.3
WSA GW16	WSI	290461	6247764	69.45
WSA GW17	WSI	291523	6247400	51.6
WSA GW18	WSI	291523	6247400	52.4
WSA GW19	WSI	291738	6248976	52.5
WSA GW20	WSI	292130	6249000	46.2
WSA GW21	WSI	292130	6249000	44.9
WSA GW22	WSI	289283	6249163	61.8
WSA GW23	WSI	291265	6247780	57.1

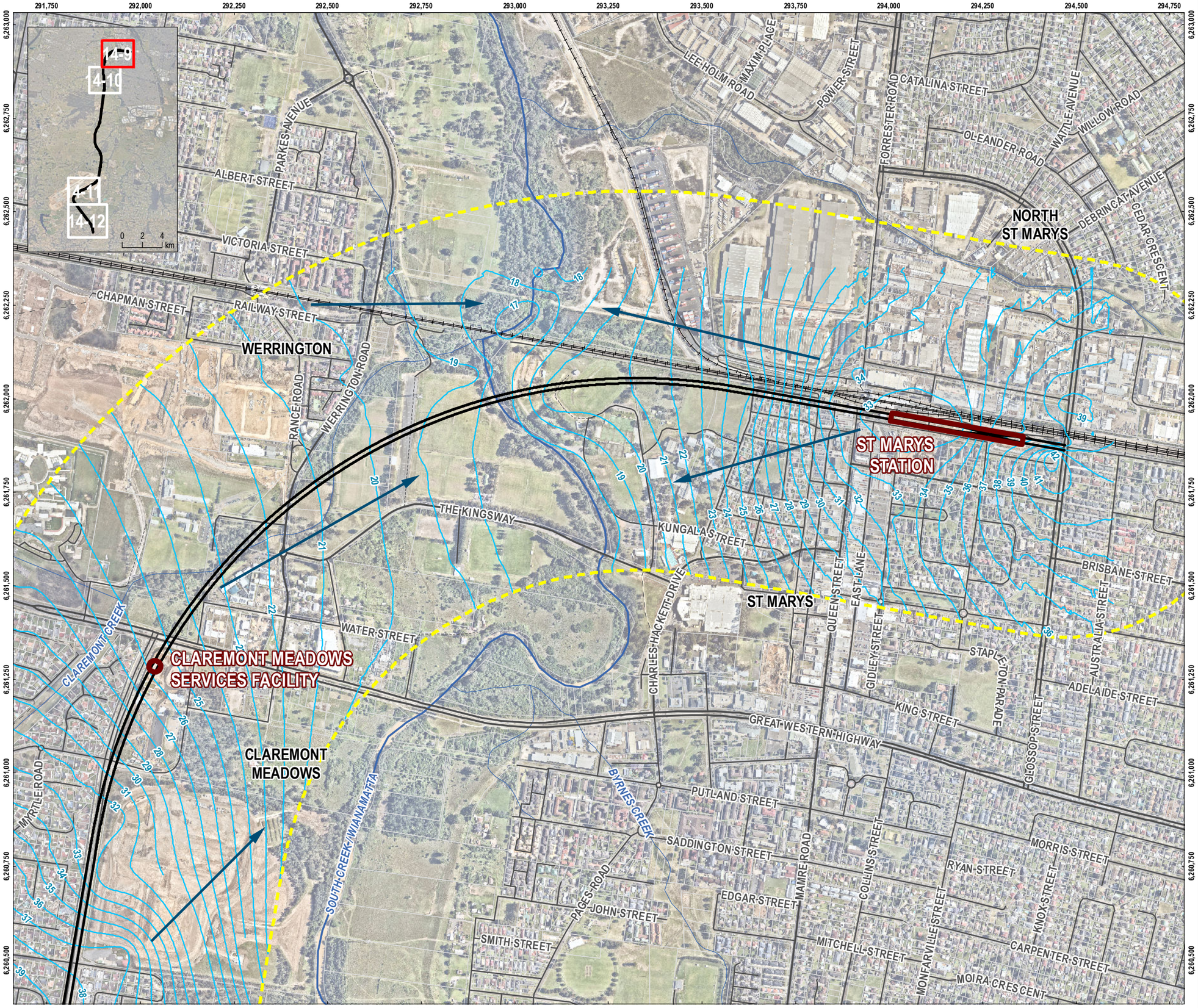
Where logger data is available, hydrographs have been developed for 49 locations along the alignment. Data has been provided by CPBG from the following sources:

- GHD (2022) - Sydney Metro Western Sydney Airport Groundwater: Monitoring Factual Report (data provided 13 April 2023); and
- CPBG hosted VWPs (data provided 18 May 2023).

Available hydrographs to 10 May 2023 are presented in Annexure E.

We recommend that groundwater levels and hydrographs be updated and discussed further in an update to the groundwater baseline assessment report following the collection of the complete intended dataset.

A review of the complete dataset should be undertaken to identify groundwater level trigger values, which will be included in the revised GMP.



LEGEND

- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Track
- Path
- Perennial Watercourse
- Non-perennial Watercourse
- Groundwater Elevation Contour (mAHD)
- Groundwater Flow Direction
- Cadastral Boundary
- Project Alignment Buffer (500 m)

SOURCE
Groundwater monitoring wells compiled by Tetra Tech Coffey.
Groundwater contours, groundwater flow direction, and alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, rail, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 8-1

Baseline Groundwater Contours - St Marys to Claremont Meadows

TETRA TECH COFFEY

DATE: **19.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F014-9_GIS_REVB**

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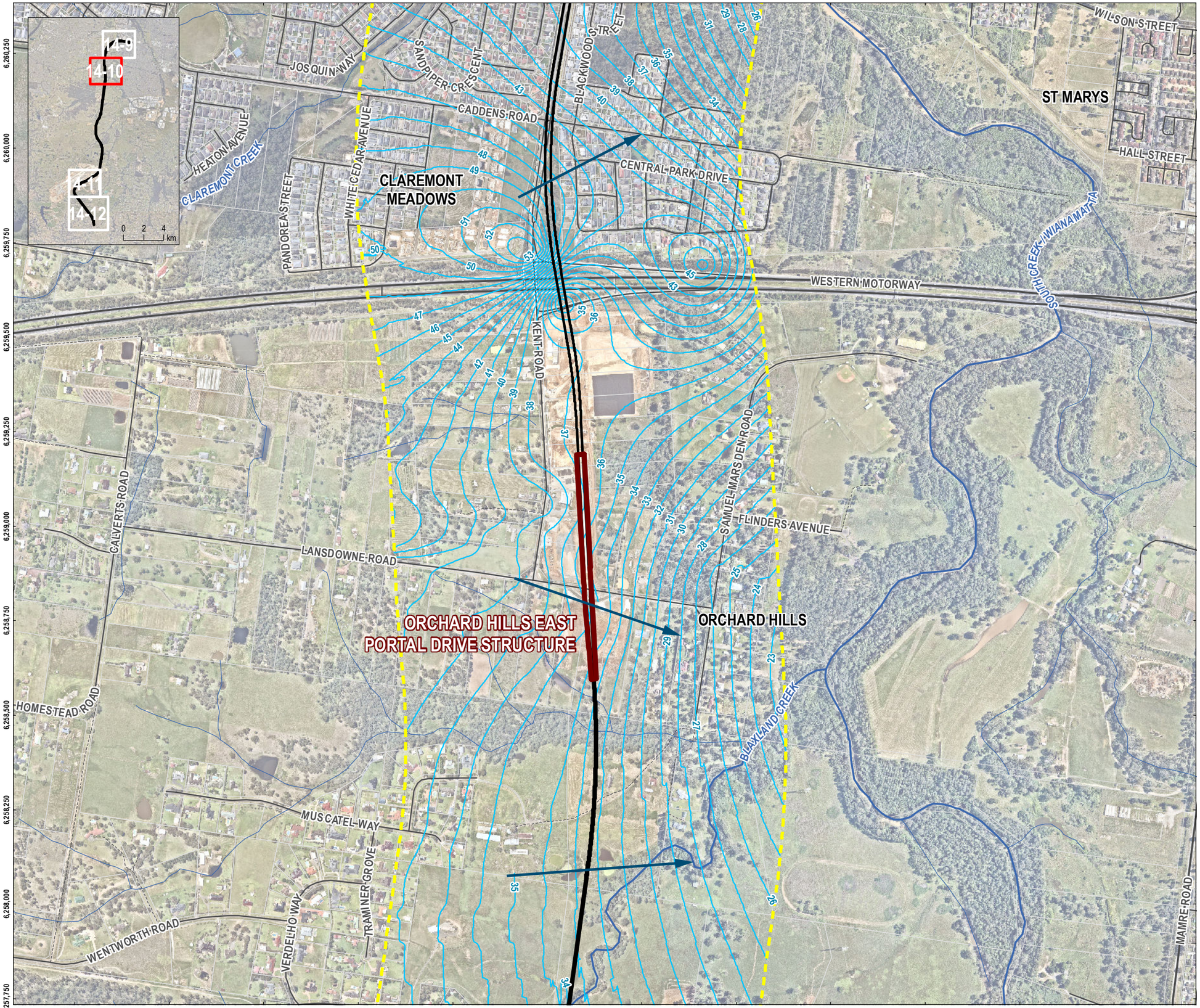
SAVED BY: TAUHDUL ISLAM 19.05.23 4:50:11 PM
DOC REFERENCE: \\TT-LOCAL\COFS772\SIG\SIG286919_SYDGE_CPBG_WSASBT\CPBG_WSASBT\CPBG_WSASBT_GIS\MXD\SYDGE292575_HIR\FIGURE14\292575_HIR_GIS007_REVB.MXD_1



CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Track
- Path
- Perennial Watercourse
- Non-perennial Watercourse
- Groundwater Elevation Contour (mAHD)
- Groundwater Flow Direction
- Cadastral Boundary
- Project Alignment Buffer (500 m)

SOURCE
Groundwater monitoring wells compiled by Tetra Tech Coffey.
Groundwater contours, groundwater flow direction, and alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 8-2

Baseline Groundwater Contours - Claremont Meadows to Orchard HIlls

TETRA TECH COFFEY

DATE: **19.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F014-10_GIS_REVB**

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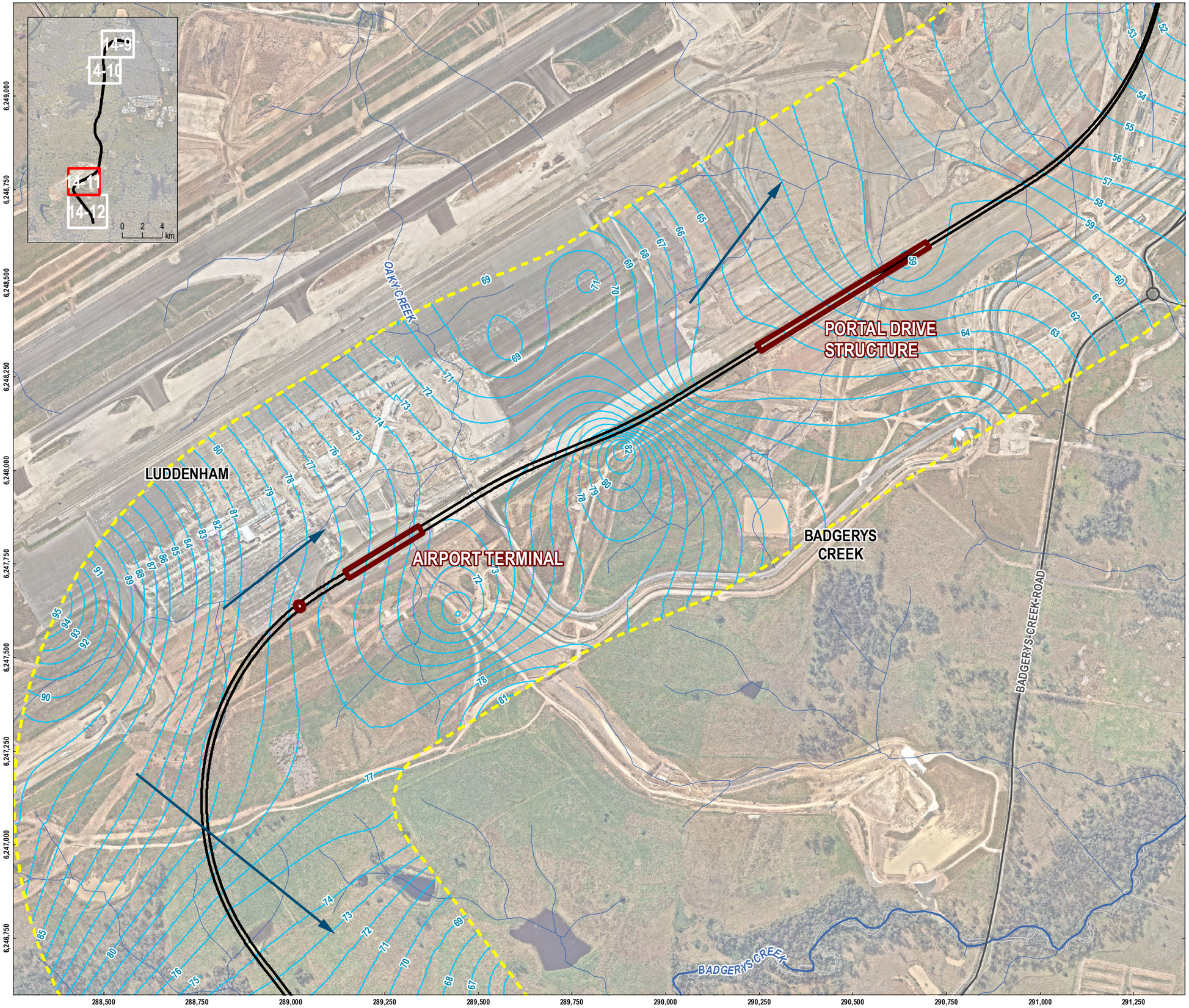

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Groundwater Elevation Contour (mAHD)
- Groundwater Flow Direction
- Cadastral Boundary
- Project Alignment Buffer (500 m)

SOURCE
Groundwater monitoring wells compiled by Tetra Tech Coffey.
Groundwater contours, groundwater flow direction, and alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date April, 2022).

N

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 8-3

Baseline Groundwater Contours - Airport

TETRA TECH COFFEY

DATE: **19.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F014-11_GIS_REVB**

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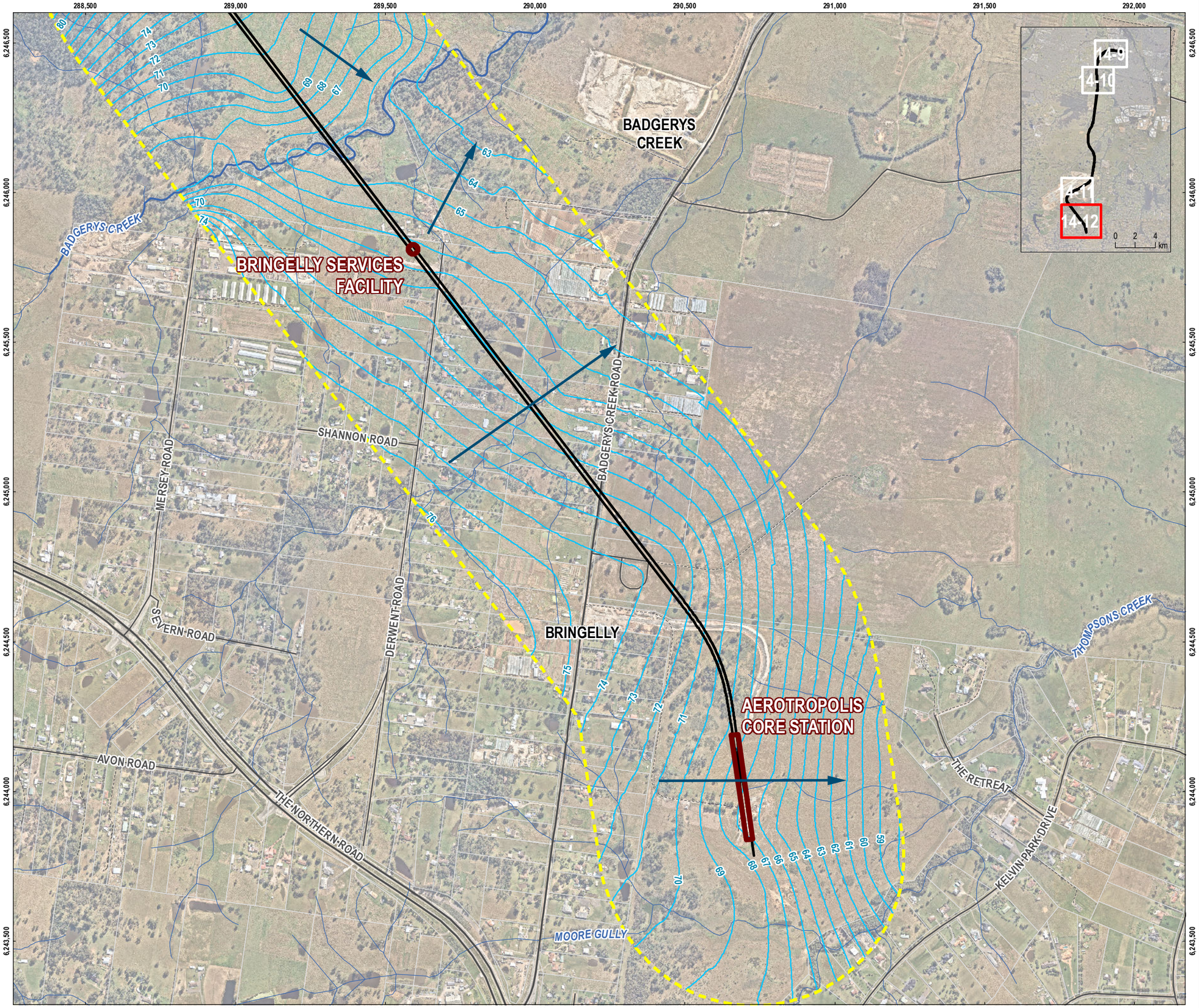

LEGEND

- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Track
- Perennial Watercourse
- Non-perennial Watercourse
- Groundwater Elevation Contour (mAHD)
- Groundwater Flow Direction
- Cadastral Boundary
- Project Alignment Buffer (500 m)

SOURCE
Groundwater monitoring wells compiled by Tetra Tech Coffey.
Groundwater contours, groundwater flow direction, and alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date April, 2022).

0 250 500 m

SCALE **1:12,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 8-4

Baseline Groundwater Contours - Bringelly to Aerotropolis

TETRA TECH COFFEY

DATE: **19.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F014-12_GIS_REVB**

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8.2 Groundwater Quality Results

8.2.1 Adopted assessment criteria

The adopted assessment criteria for groundwater assume that groundwater collected by the Project will be discharged via Trade Waste (Sydney Water) as well as directed to stormwater and creek systems (including tributaries), with the screening criteria are based on:

- ANZG (2018) 95% species protection criteria for freshwater water (unknown reliability)
- PFAS NEMP 2.0 (2018) (99% freshwater ecosystem protection)

The Australian Standard AS2159 – 2009 Piling design and installation have also been considered to assess potential groundwater aggressivity risks posed by groundwater to underground concrete and steel structures.

Discharge concentration limits negotiated with EPA as detailed in L2.4 of Environmental Licence (EPL 21672, amended 10 May 2023) and Airports (Environment Protection) Regulations (AEPR) 1997 guidelines have also been considered.

8.2.2 Baseline Groundwater Quality Review (preliminary)

General water quality reported in groundwater monitoring wells along the alignment is presented on Figure 8-5 to 8-8, with data symbolised to indicate the aquifer monitored. Regardless of depth, most groundwater wells are screened in the bedrock or residual soils, although a number of wells along the main drainage channels and creek lines (including South Creek and its tributaries) intersect a shallow alluvial deposits.

Baseline conditions have been assessed based on baseline data from new and existing wells available to 10 May 2023 compiled into an electronic ESdat database. The database includes groundwater quality data obtained directly from the supplied tender documents, supplied digital databases and the Environment Impact Statement (EIS).

Where historical laboratory data collected obtained from third party sources was not available electronically, data has been extracted from PDF format tables using PDF editing software so that it could be compiled and imported into the ESdat database. Similarly, field-measured water quality parameters (pH, electrical conductivity, redox potential, dissolved oxygen, TDS, major ions, and resistivity) not provided electronically was either extracted using PDF editing software or manually digitised.

While all reasonable efforts were made to ensure manual data transcription errors, and errors introduced during manipulation and importing to a database were identified and corrected, the potential exists for the pre-award laboratory data and water quality parameters to include errors and / or results to be omitted or assigned to incorrect analytes.

The following summary provides a preliminary review of the baseline water quality along the alignment based on all available data to 10 May 2023.

8.2.3 General Groundwater Quality (preliminary)

Groundwater electrical conductivity, and concentrations of chloride, magnesium, sulfate, and sulfate as a percentage in EC in groundwater along the alignment are shown in Figures 8-5 to 8-8. Locations have been categorised based on the sampling interval and aquifer monitored.

The preliminary spatial distribution of concentrations is also displayed on figures in Annexure A for select parameters including: pH, EC, Aluminium, Cobalt, Copper, Iron, Manganese, Zinc, Ammonia, Nitrate, Phosphate, PFOS+PFHxS, TPH C_6-C_9, and TPH C_{10}-C_{36}.

Groundwater along the alignment is generally neutral to acidic, ranging from 4.04 to 11.0 (average pH of 6.94). Generally, pH readings were below 8 pH units, with the exception of SBT-GW-4005 (8.34 – 10.08 pH units), SBT-GW-0001 (6.48 – 8.64 pH units) and SMGW-BH-A107 (7.26 – 8.11 pH units).

The field pH readings along the alignment ranged from 3.87 – 10.08 pH units (average pH of 6.38), and were generally consistent with the laboratory reported pH.

Based on laboratory measured EC and TDS, the groundwater along the alignment ranging from fresh to saline, with the TDS typically below 12,000 mg/L. The groundwater TDS is typically higher in wells screened in the bedrock and residual soils (Figure 8-5).

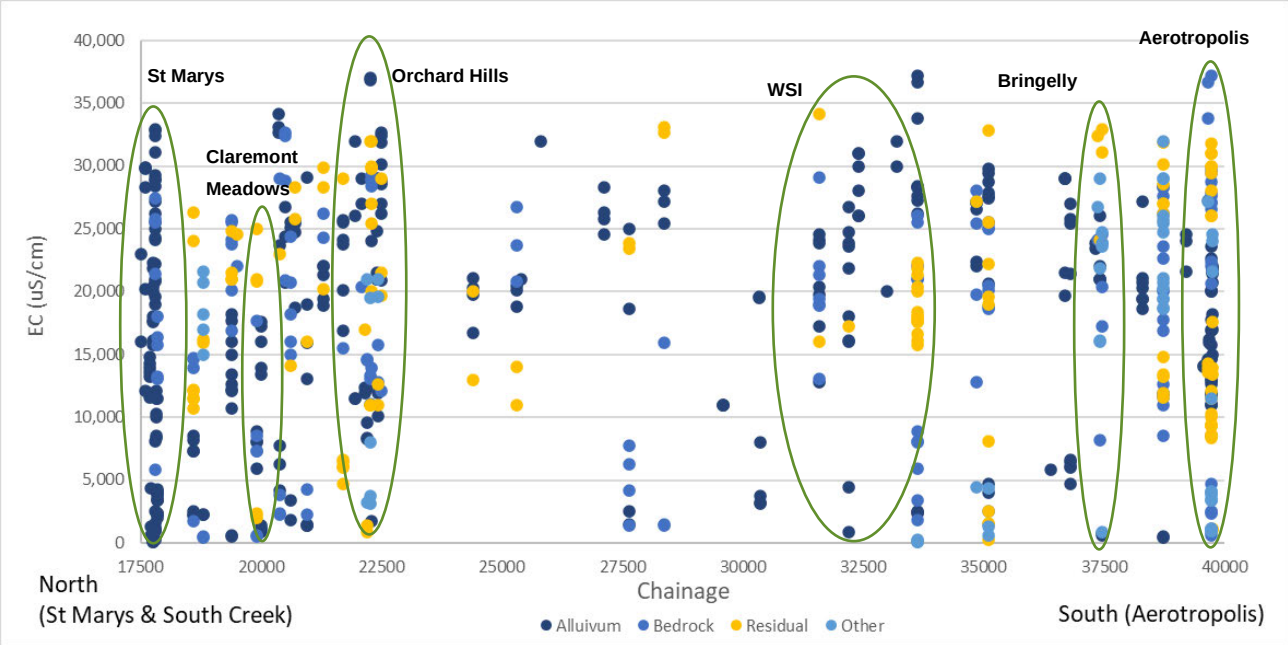


Figure 8-5: Laboratory Electrical Conductivity along the alignment between St Marys and Aerotropolis

Where available, field and laboratory measured electrical conductivity data confirm laboratory TDS results with groundwater ranging from fresh to saline.

Chloride concentrations in groundwater varied widely along the alignment ranging from 4 mg/L to 19,000 mg/L. Concentrations of chloride in groundwater are broadly consistent with TDS and EC (Figure 8-6).

The grey dashed line at 6,000mg/L in Figure 8-6 represents the Australian Standard AS2159 – 2009 (Piling – Design and installation) adopted screening criteria guideline for chloride impacts to concrete piles in soils. The concentrations of chloride along the alignment mostly exceed the adopted screening criteria guidelines for chloride impacts to steel piles in soils, placing portions of the alignment into the mild to severe aggressive classification.

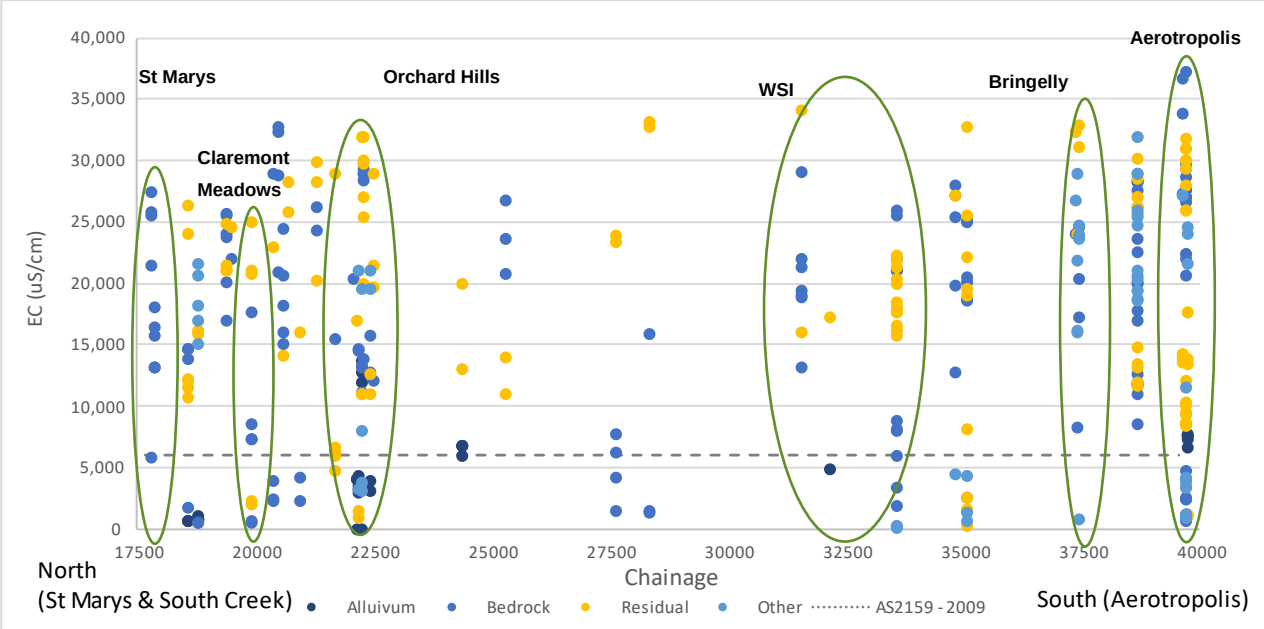


Figure 8-6: Chloride concentrations along the alignment between St Marys and Aerotropolis

Sulfate concentrations in groundwater along the alignment groundwater varied widely with concentrations ranging from 2 mg/L (SBT-GW-1002) at St Marys to 3,110 mg/L (SBT-GW-1234) in the southern tunnels. The grey dashed line at 1,000 mg/L in Figure 8-7 shows the Australian Standard AS2159 – 2009 (Piling – Design and installation) adopted screening criteria guideline for sulfate impacts to concrete piles in soils, placing portions of the alignment into the mild to moderate aggressive exposure classifications.

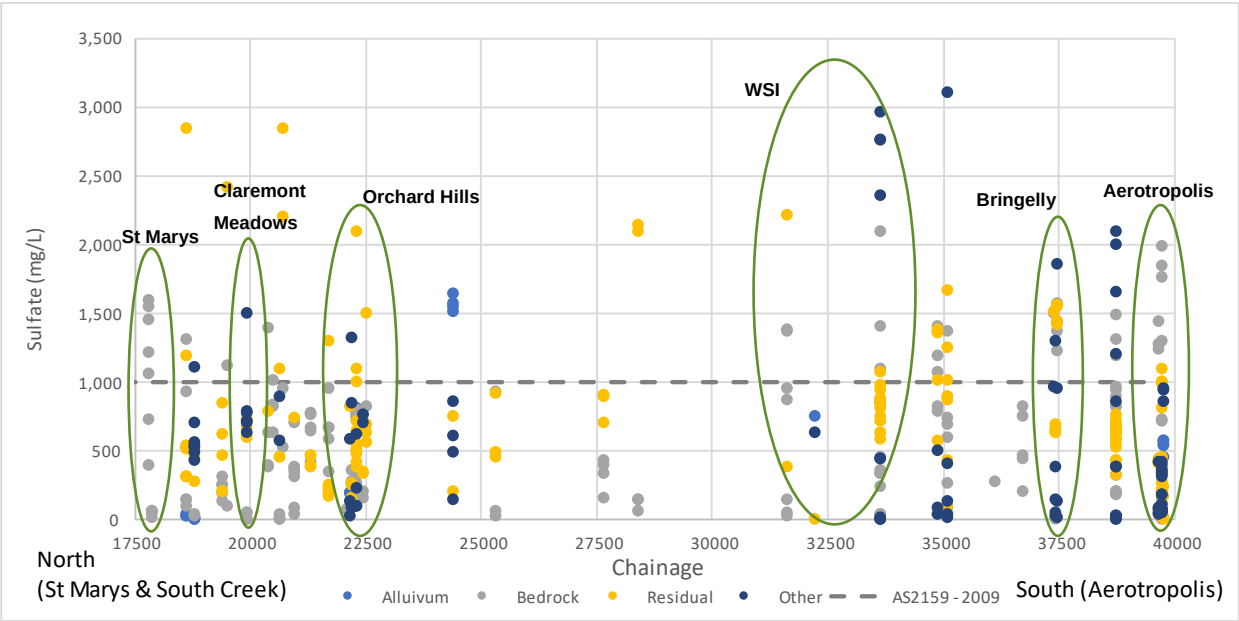


Figure 8-7: Sulfate concentrations along the alignment between St Marys and Aerotropolis

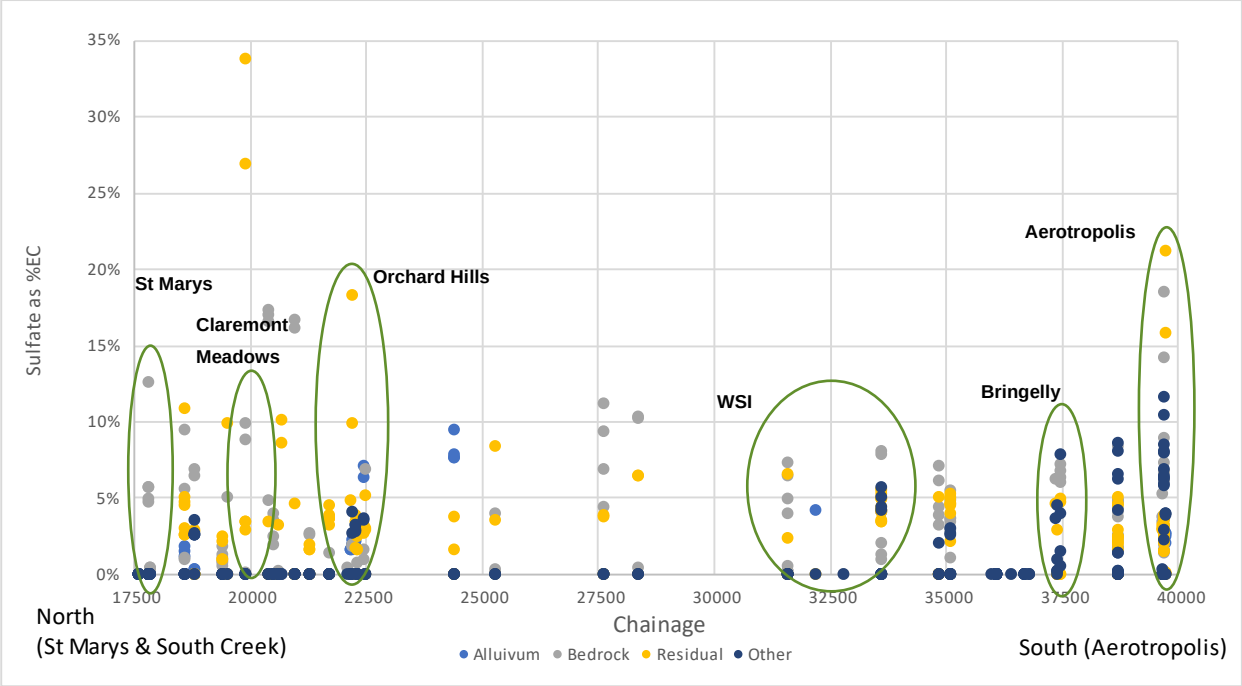


Figure 8-8: Sulfate concentrations along the alignment between St Marys and Aerotropolis

Sulfate (as SO4) as a percentage (%) of EC in groundwater ranges from 0.0% to 33.8%, with the majority of results reported less than 10%. Where the sulfate concentrations as a percentage of EC are low, this can indicate that organic compounds, such as contamination with petroleum hydrocarbons, may be present. Sulfate (as SO4) as a percentage (%) of EC was less than 1.0% at 17 locations. Locations where sulfate (as SO4) as a percentage of EC was less than 1.0% are distributed along the entire alignment (Figure 8-8).

Groundwater is typically sodium-chloride type water. The piper plot in Figure 8-9 shows the groundwater in St Marys, along the northern tunnel alignment to the Claremont Meadows Service Facility, and at some locations at Bringelly, has an increased sulfate to chloride ratio, which is attributed to the hydrocarbon or other organic impact in groundwater in these areas.

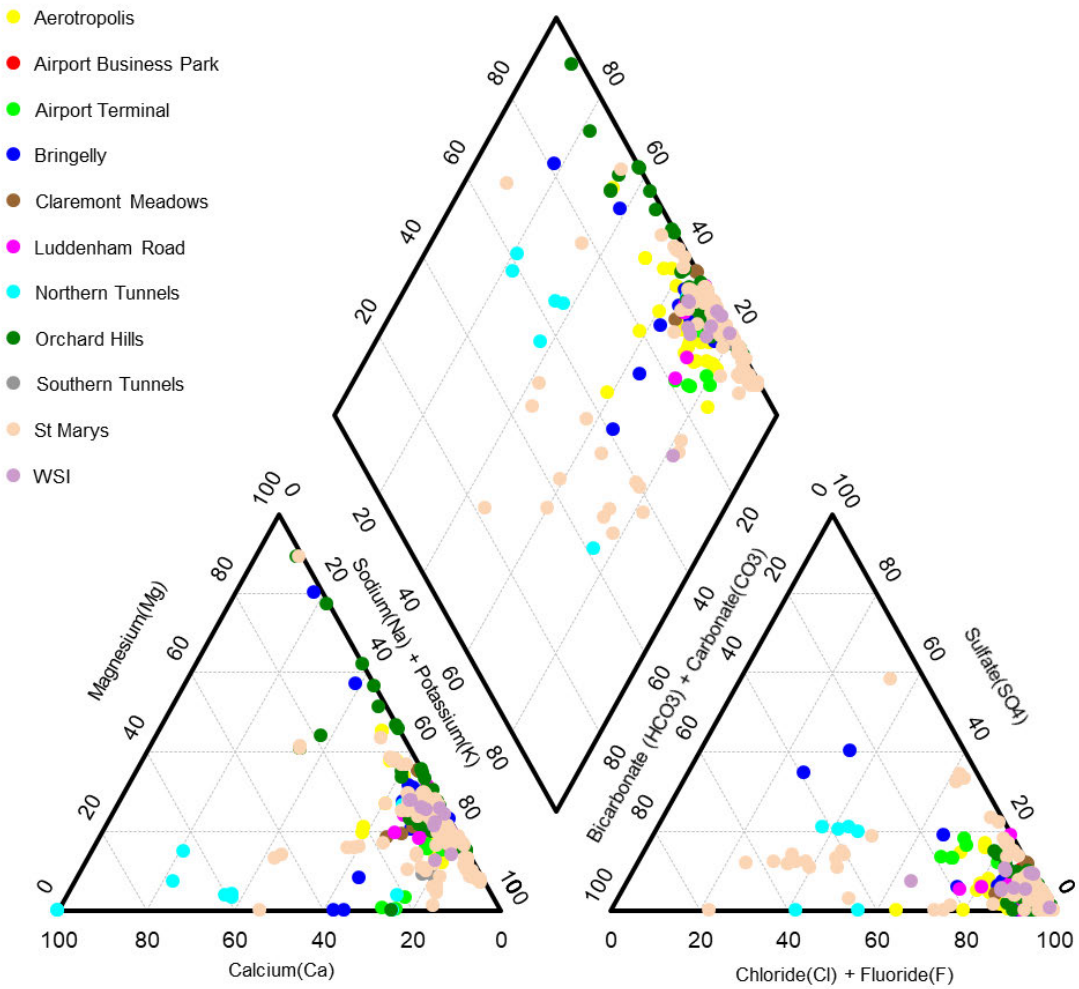


Figure 8-9: Piper diagram of groundwater quality by zone.

8.3 Groundwater Contamination Review

All available groundwater analytical data is tabulated and presented in Annexure D, and has been assessed against the adopted screening criteria outlined in Section 8.2.1. Laboratory analytical reports for groundwater baseline assessment monitoring completed from November 2022 – 10 May 2023 are provided in Annexure C.

Where available, groundwater contamination has been preliminarily assessed for each section of the Project works area and discussed in the below sections.

8.3.1 St Marys Station

Table 8-2 provides a preliminary summary of the analytical results for the St Marys monitoring zone. Due to destroyed monitoring infrastructure (SMGW-BH-A103, SMGW-A202 and SMGW-A302), the baseline dataset for St Marys to 10 May 2023 is incomplete. CPBG are currently undertaking a groundwater well re-drill program which includes replacements/refinements for these monitoring locations. We recommend that data from replacement wells be included in an updated baseline assessment.

Groundwater sampled from all accessible groundwater wells exceeded the EPL limits and/or the adopted freshwater ecosystem screening criteria for one or more dissolved metal. The metals concentration in SMGW-BH-A002, which was sampled seven times between 2019 and 2021, varied over time indicating that metals concentrations in groundwater may not consistently exceed the ANZG 95% ecosystems protection guideline level. In BH-A321 the concentration of select herbicides exceeded the appropriate ANZG ecosystems guideline. All were generally within the background ranges reported in groundwater monitoring events completed for previous investigations.

Detectable concentrations of BTEXN/ TRH were reported at five locations; SMGW-BH-A321, SBT-GW-1016, SBT-GW-1017, SBT-GW-1232 and SBT-GW-1233. Additional sampling was undertaken as part of the DSI phase to verify these results and concluded that that there is a potential minor source of hydrocarbons in groundwater (and potentially soil) which may require management during construction. All analytical results from groundwater sampled post-DSI were generally within the background ranges reported in groundwater monitoring events completed for previous investigations, and where silica-gel clean-up was undertaken concentrations were reported below the Limit of Reporting (LOR).

PFAS was detected in the majority of samples collected, with higher concentrations reported in monitoring wells in the vicinity of the former dry cleaners (1-7 Queen St) and from groundwater samples collected from SBT-GW-1021, north of the train line. The highest concentration of PFOS reported from at 1-7 Queen Street (MW1) was 1.07 µg/l. Dry cleaners are a known potential sources of PFAS. PFAS in groundwater exceeded the PFAS NEMP Freshwater Guidelines with the majority of samples where PFOS was detected exceeding the 95% species protection criteria (adjusted to 99% species protection criteria due to potential to bioaccumulate). PFOA was detected in groundwater samples, however concentrations were below the adopted screening criteria.

Significant chlorinated hydrocarbon contamination in groundwater has been identified beneath the former dry cleaner at 1-7 Queen St. This contamination has been investigated and management measures implemented to mitigate potential construction related risks and adverse changes in risk profile due to station excavation related drawdown associated with this impact.

Baseline groundwater quality associated with this contamination is reported in detail in the “Former Dry Cleaner, 1-7 Queen St – Assessment of Human Health Risk and Mitigation Options” report (SMWSASBT-CPG-SWD-SW000-GE-RPT-040540), with mitigation measures detailed in the “St Marys Station - Remedial Action Plan” (SMWSASBT-CPG-SWD-SW000-GE-RPT-040521).

Table 8-2: Groundwater contamination summary – St Marys

Parameter		Units	Trigger values			St Marys Alluvium				St Marys Residual				St Marys Bedrock			
			AS2159 – 2009 Piling design	ANZECC 2000/ ANZG 2018 FW 95%	Environmental protection license (EPL)[1]	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean
Physical / Alkalinity / Ions	Total Dissolved Solids (TDS)	mg/L	35,000			17 / 11	52	7,200	1,491	59 / 16	1,110	29,000	12,655	26 / 7	316	21,200	10,745
	Electrical Conductivity @ 25C (lab)	µS/cm			7,000	17 / 11	68	11,500	2,387	59 / 16	1,560	32,900	18,009	23 / 7	615	29,300	14,160
	pH (Field)	-	<5.5		6.5 - 8.0	14 / 11	4.74	8.64	6.23	40 / 16	3.87	6.87	5.51	13 / 7	5.41	7.42	6.56
	Redox Potential (Field)	mV				14 / 11	-72.60	301.20	90.43	39 / 16	-126.50	259.90	87.66	9 / 7	-147.70	149.80	-53.56
	Chloride	mg/L	6,000			36 / 11	4	12,200	2,763	81 / 16	201	12,100	6,954	38 / 7	111	10,700	5,771
	Sulfate as SO4 - Turbidimetric (filtered)	mg/L	1,000			36 / 11	3	3,110	542	81 / 16	33	1,670	686	38 / 7	16	961	432
	Bicarbonate Alkalinity as CaCO3	µg/L				36 / 11	2,000	491,000	155,111	80 / 16	<1000	5,100,000	194,188	38 / 7	11,000	953,000	454,026
Nutrients	Nitrogen (Total)	µg/L			1,720	36 / 11	<300	7,900	2,247	82 / 16	<200	47,400	5,662	32 / 7	600	80,500	13,685
	Phosphorus	µg/L			140	0 / 11	-	-	-	1 / 16	70	70	70	0 / 7	-	-	-
	Ammonia as N	µg/L		900	900	36 / 11	<10	4,350	906	84 / 16	<10	8,650	629	38 / 7	30	42,500	4,968
	Nitrate (as NO3-N)	µg/L				36 / 11	<10	2,580	428	83 / 16	<10	3,330	140	38 / 7	<10	3,430	148
Metals (dissolved)	Aluminium	µg/L		55	80	17 / 11	<10	650	74	60 / 16	<10	14,700	786	27 / 7	<10	80	24
	Chromium (III+VI)	µg/L		1	1	44 / 11	<1	24	2	89 / 16	<1	12	2	37 / 7	<1	58	4
	Chromium (hexavalent)	µg/L		1	1	7 / 11	<10	<100	23	15 / 16	<10	<10	10	6 / 7	<10	<10	10
	Cobalt	µg/L				17 / 11	<1	116	16	60 / 16	<1	894	167	28 / 7	<1	102	24
	Copper	µg/L		1.4	1.4	44 / 11	<1	517	14	89 / 16	<1	3,240	108	38 / 7	<1	14	2
	Iron	µg/L				19 / 11	<50	10,700	1,586	71 / 16	<50	25,000	6,374	36 / 7	<50	18,500	2,303
	Manganese	µg/L		1,900		17 / 11	<1	537	162	69 / 16	<8	22,300	2,994	33 / 7	<1	2,850	777
	Zinc	µg/L		8	15	44 / 11	<5	214	44	89 / 16	<5	1,750	135	37 / 7	<5	245	24
TPH	C6 - C9	µg/L				42 / 11	<20	5,300	791	82 / 16	<20	26,900	1,827	24 / 7	<20	1,990	326
	C10 - C36 (Sum of total)	µg/L				43 / 11	<50	1,310	91	82 / 16	<50	500	91	24 / 7	<50	570	109
PFAS	Perfluorooctane-sulfonic acid (PFOS)[2]	µg/L		0.00023		40 / 11	<0.0004	1.07	0.24	75 / 16	<0.0002	0.13	0.01	26 / 7	<0.0002	0.43	0.07
	Perfluorooctanoic acid (PFOA)[2]	µg/L		19		40 / 11	<0.0007	0.058	0.016	75 / 16	<0.0006	0.362	0.026	26 / 7	<0.0004	<0.05	0.012
	Sum (PFHxS + PFOS)	µg/L				40 / 11	<0.0012	1.070	0.247	75 / 16	<0.0003	0.275	0.023	26 / 7	<0.0005	0.441	0.067

1. EPL No. 21672, amended 10 May 2023
2. Adjusted to 99% species protection criteria due to potential for bioaccumulation

8.3.2 Claremont Meadows Service Facility

Limited additional monitoring has been conducted in the vicinity of the Claremont Meadows Service Facility as part of the baseline monitoring assessment (November 2022 – 10 May 2023) due to access constraints (SBT-GW-1028) and destroyed monitoring infrastructure (SMGW-BH-A109S). The DSI for this site was not received in sufficient time to be included in this report. We recommend the data, once reviewed be included in a future update to the baseline assessment.

8.3.3 Orchard Hills Station

A preliminary summary of groundwater quality and contamination for the Orchard Hills monitoring zone is provided in Table 8-3. Due to destroyed monitoring infrastructure (SMGW-BH-A107, SMGW-BH-A117 and SMGW-BH-A117S), the baseline dataset is currently underway as of 10 May 2023. CPBG are currently undertaking a groundwater well re-drill program, the data from which should be included in a future update to the baseline assessment.

Based on the available data mean nitrogen, copper and zinc concentrations in all three aquifers exceeded the EPL limits, as did aluminium in the residual and alluvium aquifers.

Table 8-3: Groundwater contamination summary – Orchard Hills

Parameter		Units	Trigger values			St Marys Alluvium				St Marys Residual				St Marys Bedrock			
			AS2159 – 2009 Piling design	ANZECC 2000/ ANZG 2018 FW 95%	Environmental protection license (EPL)[1]	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean
Physical / Alkalinity / Ions	Total Dissolved Solids (TDS)	mg/L	35,000			11 / 7	5,120	26,600	11,536	9 / 5	7,120	21,700	16,237	16 / 5	875	23,900	16,452
	Electrical Conductivity @ 25C (lab)	µS/cm			7,000	12 / 7	8,300	37,000	18,054	13 / 5	11,500	31,900	23,546	14 / 5	1,760	32,700	24,261
	pH (Field)	-	<5.5		6.5 - 8.0	8 / 7	4.32	6.47	5.16	4 / 5	4.73	5.56	5.25	3 / 5	6.80	7.39	7.16
	Redox Potential (Field)	mV				8 / 7	-53.90	191.50	137.41	4 / 5	-10.60	203.30	114.30	0 / 5	-	-	-
	Chloride	mg/L	6,000			13 / 7	2,980	13,700	6,087	14 / 5	3,300	10,800	7,428	19 / 5	390	14,000	8,724
	Sulfate as SO4 - Turbidimetric (filtered)	mg/L	1,000			13 / 7	160	813	443	14 / 5	200	1,200	583	19 / 5	95	2,100	700
	Bicarbonate Alkalinity as CaCO3	µg/L				13 / 7	1,000	384,000	78,769	14 / 5	<3000	120,000	28,500	19 / 5	59,000	1,000,000	505,947
Nutrients	Nitrogen (Total)	µg/L			1,720	12 / 7	<200	183,000	31,905	9 / 5	<500	4,900	1,789	10 / 5	<200	4,900	2,880
	Phosphorus	µg/L			140	0 / 7	-	-	-	0 / 5	-	-	-	0 / 5	-	-	-
	Ammonia as N	µg/L		900	900	13 / 7	70	750	342	14 / 5	70	840	291	19 / 5	80	5,110	2,232
	Nitrate (as NO3-N)	µg/L				13 / 7	<10	183,000	26,328	14 / 5	<5	140	24	19 / 5	<10	110	42
Metals (dissolved)	Aluminium	µg/L		55	80	11 / 7	<10	2,880	931	10 / 5	<10	2,360	916	18 / 5	<10	520	78
	Chromium (III+VI)	µg/L		1	1	16 / 7	<1	<10	3	14 / 5	<1	5	1	18 / 5	<1	3	1
	Chromium (hexavalent)	µg/L		1	1	5 / 7	<10	<10	10	2 / 5	<10	<10	10	0 / 5	-	-	-
	Cobalt	µg/L				10 / 7	5	669	187	14 / 5	109	870	459	18 / 5	<1	647	123
	Copper	µg/L		1.4	1.4	15 / 7	<1	12	7	9 / 5	<1	24	7	18 / 5	<1	16	3
	Iron	µg/L				12 / 7	<100	23,700	6,777	9 / 5	220	98,900	35,406	18 / 5	180	115,000	21,973
	Manganese	µg/L		1,900		11 / 7	74	9,350	2,011	14 / 5	451	43,000	5,496	18 / 5	109	1,090	642
	Zinc	µg/L		8	15	16 / 7	<5	833	248	14 / 5	31	606	240	17 / 5	<5	363	60
TPH	C6 - C9	µg/L				17 / 7	<20	<20	20	9 / 5	<20	120	36	5 / 5	<20	100	52
	C10 - C36 (Sum of total)	µg/L				14 / 7	<50	650	104	7 / 5	<50	200	101	4 / 5	<50	300	178
PFAS	Perfluorooctane-sulfonic acid (PFOS)[2]	µg/L		0.00023		12 / 7	<0.0003	<0.01	0.008	7 / 5	<0.0001	<0.01	0.003	3 / 5	<0.0005	<0.05	0.02
	Perfluorooctanoic acid (PFOA)[2]	µg/L		19		12 / 7	<0.0006	<0.01	0.008	7 / 5	<0.0006	<0.01	0.009	3 / 5	<0.01	<0.05	0.023
	Sum (PFHxS + PFOS)	µg/L				13 / 7	<0.0006	<0.01	0.008	7 / 5	<0.001	<0.01	0.004	4 / 5	<0.001	<0.05	0.016

1. EPL No. 21672, amended 10 May 2023
2. Adjusted to 99% species protection criteria due to potential for bioaccumulation

8.3.4 Western Sydney International tunnel portal and Airport Terminal Station

Table 8-4 provides a preliminary summary of the analytical results for groundwater quality in the vicinity of the WSI tunnel portal and Airport Terminal Station. Due to access constraints, limited additional baseline data has been collected for this area. Access to Airport Land is imminent, and groundwater quality data from additional locations once sampled should be included in a future update to the baseline assessment.

Groundwater sampled from all accessible groundwater wells exceeded the AEPR and/or adopted freshwater ecosystem screening criteria for one or more dissolved metal. Mean zinc concentrations in all three aquifers exceeded the AEPR limits, as did aluminium in the bedrock aquifer; and copper and iron in the alluvium and bedrock aquifers. In general, the reported concentrations were within the range reported in pre-award data.

Detectable concentrations of TRH were reported in Airport Terminal wells SBT-GW-3012-B and SBT-GW-3022; and in Western Sydney International wells SMGW-BH-C302, SMGW-BH-C305, SMGW-BH-C352 and WSA GW21.

Detectable concentrations of PFOS were detected in SMGW-BH-C301, SMGW-BH-C321, SMGW-BH-C325 and SMGW-BH-C331 which exceeded the PFAS NEMP Freshwater Guidelines with 99% species protection. PFOA was also detected in groundwater samples, however concentrations were below the adopted screening criteria.

Table 8-4: Groundwater contamination summary – Airport Land

Parameter		Units	Trigger values			Airport Alluvium				Airport Residual				Airport Bedrock			
			AS2159 – 2009 Piling design	ANZECC 2000/ ANZG 2018 FW 95%	AEPR (1997) - Table 1.03 Freshwater	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean
Physical / Alkalinity / Ions	Total Dissolved Solids (TDS)	mg/L	35,000			9 / 26	468	20,000	11,775	4 / 9	2,750	17,400	12,663	29 / 17	1,500	36,400	18,235
	Electrical Conductivity @ 25C (lab)	µS/cm				10 / 26	826	26,700	17,617	21 / 9	4,670	32,000	22,113	30 / 17	2,340	37,200	22,829
	pH (Field)	-	<5.5		6.5-9	132 / 26	5.49	8.38	6.65	4 / 9	6.93	7.48	7.19	83 / 17	5.11	7.82	6.81
	Redox Potential (Field)	mV				71 / 26	-271.70	148.00	-63.37	4 / 9	-184.20	-8.30	-108.93	55 / 17	-337.10	193.40	-47.07
	Chloride	mg/L	6,000			21 / 26	147	11,000	6,650	23 / 9	1,080	11,000	7,250	32 / 17	615	12,300	7,675
	Sulfate as SO4 - Turbidimetric (filtered)	mg/L	1,000			21 / 26	12	1,860	597	23 / 9	168	1,500	784	32 / 17	3	1,990	842
	Bicarbonate Alkalinity as CaCO3	µg/L				21 / 26	19,000	1,400,000	798,714	23 / 9	160,000	1,400,000	890,739	32 / 17	<1000	11,000,000	1,023,813
Nutrients	Nitrogen (Total)	µg/L			100	104 / 26	<200	70,000	3,112	4 / 9	<500	6,900	2,900	68 / 17	<200	16,200	4,766
	Phosphorus	µg/L			10	0 / 26	-	-	-	0 / 9	-	-	-	26 / 17	<50	8,620	1,235
	Ammonia as N	µg/L		900		117 / 26	<10	13,000	1,652	23 / 9	<10	1,940	328	71 / 17	<20	8,200	2,205
	Nitrate (as NO3-N)	µg/L				109 / 26	<6	91,000	1,041	23 / 9	<5	5,360	263	66 / 17	<10	14,200	1,284
Metals (dissolved)	Aluminium	µg/L		55	100	12 / 26	<10	220	48	16 / 9	<10	<50	35	31 / 17	<10	5,310	360
	Chromium (III+VI)	µg/L		1	10	108 / 26	<1	4	1	23 / 9	<1	8	2	67 / 17	<1	<20	4
	Chromium (hexavalent)	µg/L		1	10	0 / 26	-	-	-	4 / 9	<10	<10	10	23 / 17	<10	<10	10
	Cobalt	µg/L				21 / 26	<1	30	9	23 / 9	<1	28	8	33 / 17	<1	490	47
	Copper	µg/L		1.4	2	106 / 26	<1	87	10	18 / 9	<1	1	1	66 / 17	<1	43	8
	Iron	µg/L			1000	18 / 26	<50	24,000	1,726	21 / 9	<10	880	326	32 / 17	<41	12,400	1,561
	Manganese	µg/L		1,900		21 / 26	1	4,550	774	23 / 9	6	2,700	1,327	33 / 17	<20	23,000	2,334
	Zinc	µg/L		8	5	108 / 26	<5	290	48	22 / 9	<5	140	26	67 / 17	<5	1,090	73
TPH	C6 - C9	µg/L			150	109 / 26	<10	650	27	20 / 9	<10	61	22	68 / 17	<20	<20	20
	C10 - C36 (Sum of total)	µg/L			600	106 / 26	<0	1,130	121	20 / 9	<0	300	105	68 / 17	<50	3,300	142
PFAS	Perfluorooctane-sulfonic acid (PFOS)[1]	µg/L		0.00023 [1]		39 / 26	<0.0001	<0.05	0.01	20 / 9	<0.0001	<0.01	0.002	29 / 17	<0.0001	<0.01	0.009
	Perfluorooctanoic acid (PFOA)[1]	µg/L		19 [1]		39 / 26	<0.0002	<0.05	0.012	20 / 9	<0.0002	<0.01	0.009	29 / 17	<0.01	0.050	0.011
	Sum (PFHxS + PFOS)	µg/L				39 / 26	<0.0002	<0.05	0.010	20 / 9	<0.0002	<0.01	0.003	29 / 17	<0.001	0.018	0.010

1. Airports (Environment Protection) Regulations (AEPR) 1997
2. Adjusted to 99% species protection criteria due to potential for bioaccumulation

8.3.5 Bringelly Services Facility

Three onsite monitoring bores were destroyed at the Bringelly Service Facility, therefore limited additional baseline data has been collected for this area to 10 May 2023. CPBG are currently undertaking a groundwater well re-drill program, the data from which should be included in a future update to the baseline assessment.

Table 8-5 provides a summary of the currently available analytical results for the Bringelly Services Facility monitoring zone.

Table 8-5: Groundwater contamination summary – Bringelly

Parameter		Units	Trigger values			Bringelly Alluvium				Bringelly Residual				Bringelly Bedrock			
			AS2159 – 2009 Piling design	ANZECC 2000/ ANZG 2018 FW 95%	Environmental protection license (EPL)[1]	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean
Physical / Alkalinity / Ions	Total Dissolved Solids (TDS)	mg/L	35,000			1 / 2	14,000	14,000	14,000	2 / 1	16,200	16,600	16,400	2 / 3	14,000	15,000	14,500
	Electrical Conductivity @ 25C (lab)	µS/cm			7,000	1 / 2	21,000	21,000	21,000	2 / 1	23,400	23,900	23,650	4 / 3	21,000	26,000	22,500
	pH (Field)	-	<5.5		6.5 - 8.0	0 / 2	-	-	-	2 / 1	6.62	6.71	6.67	0 / 3	-	-	-
	Redox Potential (Field)	mV				0 / 2	-	-	-	2 / 1	78.20	175.40	126.80	0 / 3	-	-	-
	Chloride	mg/L	6,000			2 / 2	8,300	8,480	8,390	3 / 1	7,090	7,900	7,617	4 / 3	8,300	19,000	12,400
	Sulfate as SO4 - Turbidimetric (filtered)	mg/L	1,000			2 / 2	850	1,330	1,090	3 / 1	704	906	834	4 / 3	850	2,100	1,225
	Bicarbonate Alkalinity as CaCO3	µg/L				2 / 2	760,000	938,000	849,000	3 / 1	882,000	1,120,000	975,000	4 / 3	710,000	990,000	805,000
Nutrients	Nitrogen (Total)	µg/L			1,720	2 / 2	1,000	2,900	1,950	3 / 1	1,000	2,300	1,567	2 / 3	2,000	2,900	2,450
	Phosphorus	µg/L			140	2 / 2	*<10*	*<50*	30	3 / 1	*<50*	340	157	3 / 3	*<10*	280	100
	Ammonia as N	µg/L		900	900	2 / 2	810	3,400	2,105	3 / 1	450	940	663	4 / 3	80	3,400	1,968
	Nitrate (as NO3-N)	µg/L				2 / 2	*<10*	*<20*	15	3 / 1	*<10*	*<10*	10	3 / 3	*<20*	*<20*	20
Metals (dissolved)	Aluminium	µg/L		55	80	1 / 2	*<50*	*<50*	50	2 / 1	*<10*	*<10*	10	4 / 3	*<50*	80	58
	Chromium (III+VI)	µg/L		1	1	2 / 2	*<1*	*<1*	1	5 / 1	*<1*	*<1*	1	4 / 3	*<1*	*<1*	1
	Chromium (hexavalent)	µg/L		1	1	0 / 2	-	-	-	1 / 1	*<10*	*<10*	10	0 / 3	-	-	-
	Cobalt	µg/L				1 / 2	2	2	2	2 / 1	6	6	6	4 / 3	2	4	3
	Copper	µg/L		1.4	1.4	2 / 2	1	4	3	5 / 1	*<1*	2	1	2 / 3	3	4	4
	Iron	µg/L				1 / 2	210	210	210	2 / 1	174	191	183	4 / 3	210	720	358
	Manganese	µg/L		1,900		1 / 2	200	200	200	2 / 1	*<50*	*<50*	50	4 / 3	180	230	203
	Zinc	µg/L		8	15	1 / 2	17	17	17	5 / 1	7	13	9	2 / 3	17	28	23
TPH	C6 - C9	µg/L				2 / 2	*<20*	*<20*	20	5 / 1	*<20*	20	20	4 / 3	*<20*	*<20*	20
	C10 - C36 (Sum of total)	µg/L				2 / 2	*<50*	*<100*	75	4 / 1	*<50*	*<100*	63	4 / 3	*<100*	*<100*	100
PFAS	Perfluorooctane-sulfonic acid (PFOS)[2]	µg/L		0.00023		2 / 2	*<0.0001*	*<0.0003*	0.0002	4 / 1	*<0.0003*	*<0.01*	0.01	4 / 3	*<0.0001*	0.0002	0.0001
	Perfluorooctanoic acid (PFOA)[2]	µg/L		19		2 / 2	*<0.0006*	*<0.01*	0.005	4 / 1	*<0.0005*	*<0.01*	0.008	4 / 3	*<0.01*	*<0.01*	0.010
	Sum (PFHxS + PFOS)	µg/L				2 / 2	*<0.0003*	*<0.001*	0.001	4 / 1	<0.0003	<0.01	0.005	4 / 3	*<0.001*	*<0.001*	0.001

1. EPL No. 21672, amended 10 May 2023
2. Adjusted to 99% species protection criteria due to potential for bioaccumulation

8.3.6 Aerotropolis Core Station

Table 8-6 provides a preliminary summary of the analytical groundwater quality results for the Aerotropolis Core Station monitoring zone. The full program of additional baseline sampling has not been able to be completed to 10 May 2023 due to destroyed monitoring infrastructure (SMGW-BH-D310). CPBG JV are currently undertaking a groundwater well re-drill program, the data from which should be included in a future update to the baseline assessment.

Groundwater sampled from all accessible groundwater wells exceeded the EPL and/or the adopted freshwater ecosystem screening criteria for one or more dissolved metal. Mean copper concentrations in all aquifers exceeded the EPL. In general, the reported concentrations were within the range of concentrations reported in pre-award groundwater samples.

PFAS was detected in SBT-GW-4002, SBT-GW-4003, SBT-GW-4005, SBT-GW-4020 and SBT-GW-4022. The concentrations of PFOS exceeded the PFAS NEMP Freshwater Guidelines with 99% species protection in SBT-GW-4002 and SBT-GW-4005. PFOA was also detected in groundwater samples however concentrations were below the adopted screening criteria.

Detectable concentrations of nutrients including ammonia, speciated nitrogen and phosphorous were reported in all groundwater samples, with the mean concentration of ammonia and phosphorous exceeding the adopted screening criteria the alluvium, residual and bedrock aquifers.

Table 8-6: Groundwater contamination summary – Aerotropolis

Parameter		Units	Trigger values			Aerotropolis Alluvium				Aerotropolis Residual				Aerotropolis Bedrock			
			AS2159 – 2009 Piling design	ANZECC 2000/ ANZG 2018 FW 95%	Environmental protection license (EPL)[1]	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean	Samples/ locations	Minimum	Maximum	Mean
Physical / Alkalinity / Ions	Total Dissolved Solids (TDS)	mg/L	35,000			13 / 13	11,000	20,400	14,954	8 / 6	6,850	12,000	9,539	24 / 13	283	16,200	9,091
	Electrical Conductivity @ 25C (lab)	µS/cm			7,000	13 / 13	15,000	24,600	20,862	8 / 6	11,000	20,000	15,150	24 / 13	452	23,600	13,657
	pH (Field)	-	<5.5		6.5 - 8.0	9 / 13	6.50	7.32	6.99	4 / 6	6.11	7.19	6.78	6 / 13	6.45	7.49	6.82
	Redox Potential (Field)	mV				9 / 13	-34.60	101.30	19.24	4 / 6	35.30	157.60	89.23	6 / 13	-157.50	116.80	-52.57
	Chloride	mg/L	6,000			23 / 13	4,650	9,010	6,758	11 / 6	2,790	7,200	4,872	27 / 13	93	7,260	4,303
	Sulfate as SO4 - Turbidimetric (filtered)	mg/L	1,000			23 / 13	22	1,110	578	11 / 6	210	918	523	27 / 13	31	1,490	437
	Bicarbonate Alkalinity as CaCO3	µg/L				23 / 13	500,000	1,220,000	929,000	11 / 6	643,000	1,200,000	1,024,636	27 / 13	40,000	1,350,000	912,852
Nutrients	Nitrogen (Total)	µg/L			1,720	23 / 13	<500	28,300	4,117	14 / 6	400	16,100	2,746	26 / 13	700	6,900	3,123
	Phosphorus	µg/L			140	23 / 13	<30	16,200	1,416	12 / 6	<10	7,330	696	25 / 13	<10	1,230	165
	Ammonia as N	µg/L		900	900	23 / 13	<50	4,910	959	14 / 6	90	3,800	1,248	27 / 13	30	4,140	2,170
	Nitrate (as NO3-N)	µg/L				23 / 13	<10	560	68	14 / 6	<10	70	26	27 / 13	<10	3,110	345
Metals (dissolved)	Aluminium	µg/L		55	80	13 / 13	<10	310	38	5 / 6	<10	<10	10	24 / 13	<10	<50	13
	Chromium (III+VI)	µg/L		1	1	25 / 13	<1	19	2	11 / 6	<1	<1	1	25 / 13	<1	1	1
	Chromium (hexavalent)	µg/L		1	1	8 / 13	<10	<1000	134	2 / 6	<10	<10	10	2 / 13	<10	<10	10
	Cobalt	µg/L				13 / 13	<1	7	3	7 / 6	<1	1,020	149	24 / 13	<1	47	7
	Copper	µg/L		1.4	1.4	25 / 13	<1	9	2	10 / 6	<1	8	2	25 / 13	<1	10	2
	Iron	µg/L				13 / 13	182	1,950	1,097	7 / 6	45	5,450	1,037	24 / 13	<1	2,600	407
	Manganese	µg/L		1,900		13 / 13	<50	3,040	412	10 / 6	<50	900	295	25 / 13	<50	4,580	1,547
	Zinc	µg/L		8	15	25 / 13	<5	27	10	10 / 6	<5	59	16	25 / 13	<5	24	7
TPH	C6 - C9	µg/L				25 / 13	<20	<20	20	16 / 6	<20	40	23	31 / 13	<20	80	29
	C10 - C36 (Sum of total)	µg/L				22 / 13	<50	<100	57	14 / 6	<50	880	174	30 / 13	<50	840	125
PFAS	Perfluorooctane-sulfonic acid (PFOS)[2]	µg/L		0.00023		17 / 13	<0.0003	<0.01	0.00	14 / 6	<0.0001	<0.01	0.01	31 / 13	<0.0001	<0.05	0.01
	Perfluorooctanoic acid (PFOA)[2]	µg/L		19		17 / 13	<0.0005	<0.01	0.004	14 / 6	<0.0008	<0.01	0.007	31 / 13	<0.0008	<0.05	0.010
	Sum (PFHxS + PFOS)	µg/L				17 / 13	<0.0003	0.107	0.010	14 / 6	<0.0008	<0.01	0.006	31 / 13	<0.0008	<0.05	0.010

1. EPL No. 21672, amended 10 May 2023
2. Adjusted to 99% species protection criteria due to potential for bioaccumulation

9 Groundwater Monitoring Program (GMP) review

A review of the GMP is currently underway. We note that as not all data could be collected for this baseline assessment, this baseline assessment report and the GMP may require further update following the review of new data, once available.

Baseline groundwater levels and inferred groundwater contours have been revised based on manually gauged levels and VWP data collected as part of the baseline assessment (as presented in Section 8.1). The GMP review will include selection of key monitoring locations where groundwater level triggers will be developed based on drawdown predicted by the groundwater model.

Based on the available baseline data (to 10 May 2023), no additional significant sources of existing groundwater contamination requiring active mitigation have been identified.

Where sufficient data is available the review of the GMP will include development of groundwater quality triggers to monitor GDE conditions (as outlined in Section 6.1.1 of the GMP), and where the adopted assessment criteria are exceeded, so that any adverse change in risk due to project activities can be identified.

Note that not all bores included in the baseline assessment are required for the construction stage groundwater monitoring program. The proposed construction monitoring plan (CMP) detailed in Section 6 of the GMP will be revised as part of the GMP review process.

10 Conclusions and recommendations

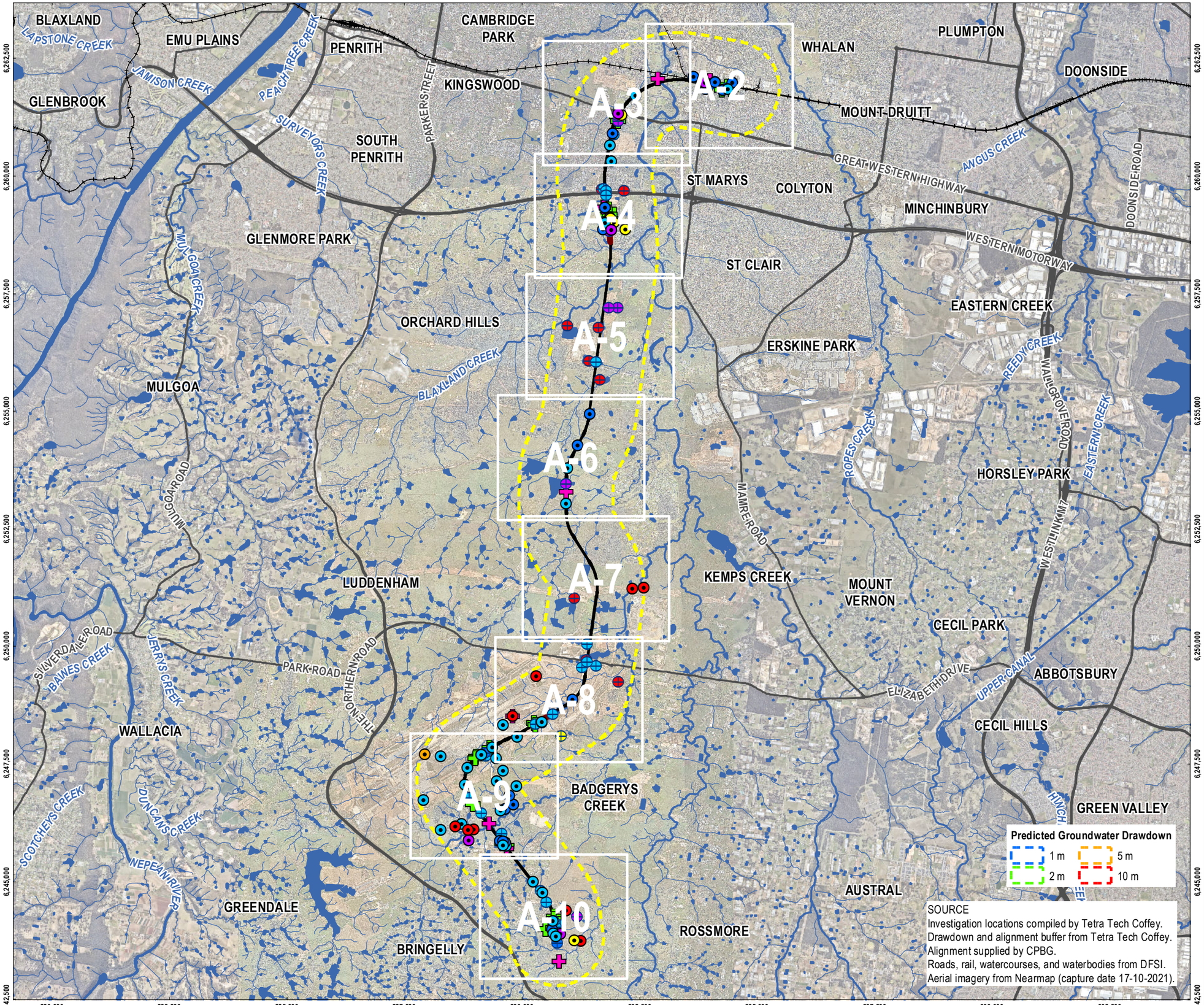
10.1 Conclusions

Based on the review of available groundwater level and analytical data, groundwater level and quality is generally consistent with the HIR, DSIs and previous investigation phases.

10.2 Recommendations

Following completion of groundwater baseline sampling and instrument installation, we recommend that this baseline assessment report be reviewed and updated if necessary.

Annexure A Monitoring Network Figures



SOURCE
Investigation locations compiled by Tetra Tech Coffey.
Drawdown and alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads, rail, watercourses, and waterbodies from DFSI.
Aerial imagery from Nearmap (capture date 17-10-2021).

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Existing VWP
- Proposed VWP

Existing Monitoring Bore

- Alluvium
- Alluvium/Bedrock
- Bedrock
- Residual
- Residual/Bedrock
- Screened Lithology TBC

Destroyed/ Lost/ Unable to be Accessed Monitoring Bore

- Alluvium/Bedrock
- Bedrock
- Residual
- Residual/Bedrock
- Screened Lithology TBC

- Project Alignment
- Project Alignment Structure
- Railway
- Major Road
- Perennial Watercourse
- Non-perennial Watercourse
- Waterbody
- Project Alignment Buffer (1 km)

0 1 2 km

SCALE 1:80,000
PAGE SIZE: A3
PROJECTION: GDA2020 MGA Zone 56

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-1

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

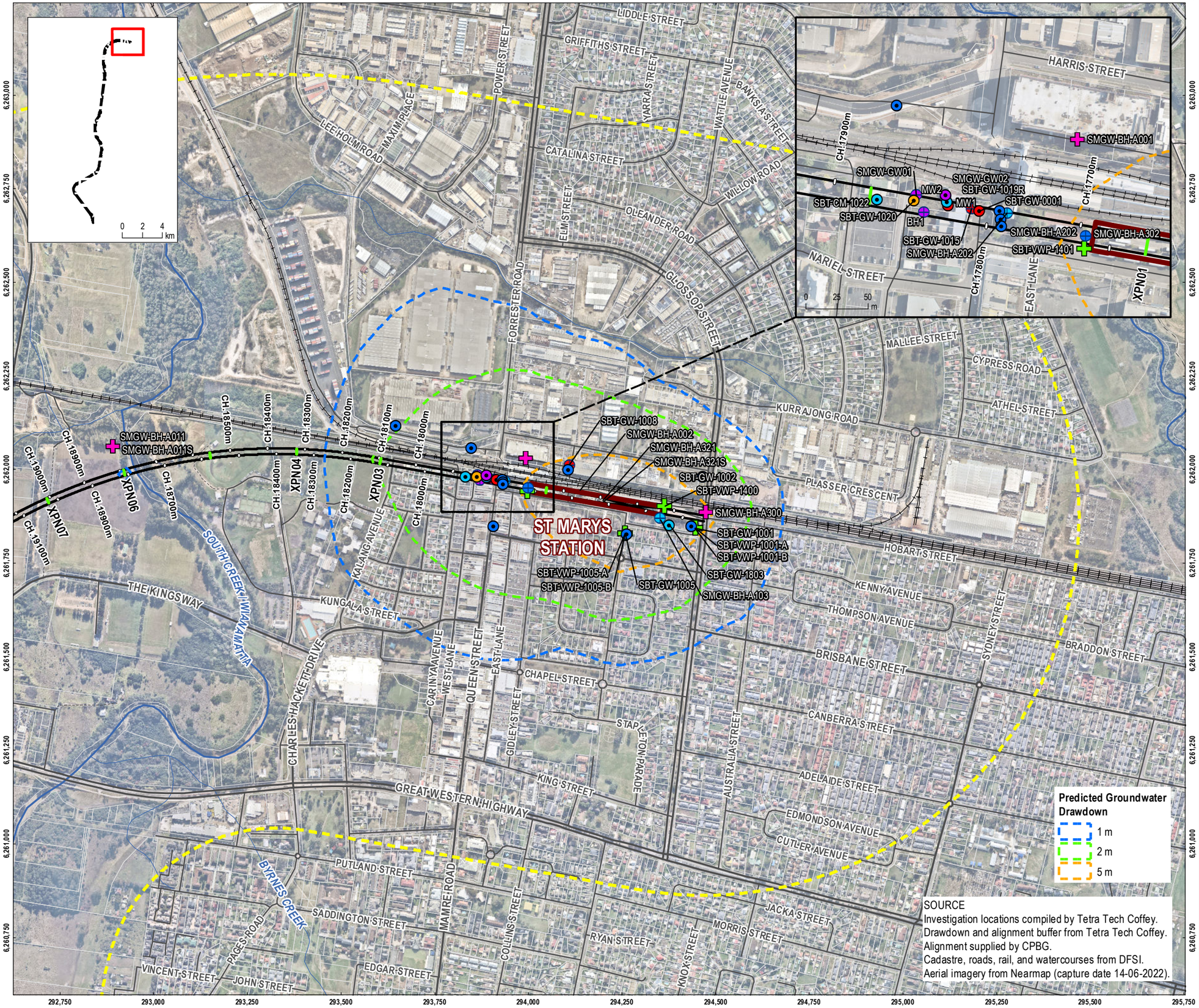
Groundwater Monitoring Plan

TETRA TECH COFFEY

DATE: 17.05.23 PROJECT: 754-SYDGE292575 FILE: 292575_GMP_A_FA-1_GIS_REVA

DISCLAIMER: THIS FIGURE HAS BEEN PRODUCED FOR INTERNAL REVIEW ONLY AND MAY CONTAIN INCONSISTENCIES OR OMISSIONS. IT IS NOT INTENDED FOR PUBLICATION.

SAVED BY: TAUHIDUL.ISLAM 17.05.23 12:10:41 PM
DOC REFERENCE: \\TT.LOCAL\COF\S772\S\GIS\286919_SYDGE_CPBG_WSASBT\CPBG_WSASBT_GIS\MXD\SYDGE292575_GMP\MAY 2023\292575_GMP_A_GIS001_REVA.MXD_1



SOURCE
Investigation locations compiled by Tetra Tech Coffey.
Drawdown and alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, rail, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date 14-06-2022).

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Existing VWP
- Proposed VWP

Existing Monitoring Bore
- Alluvium
- Bedrock
- Residual
- Residual/Bedrock
- Screened Lithology TBC

Destroyed/ Lost/ Unable to be Accessed Monitoring Bore
- Bedrock
- Residual
- Residual/Bedrock
- Screened Lithology TBC

- Project Alignment
- Project Alignment Chainage
- Project Alignment Cross Passage
- Project Alignment Structure
- Railway
- Major Road
- Minor Road
- Track
- Path
- Perennial Watercourse
- Non-perennial Watercourse
- Cadastral Boundary
- Project Alignment Buffer (1 km)

N

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-2

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

Groundwater Monitoring Plan

TETRA TECH COFFEY

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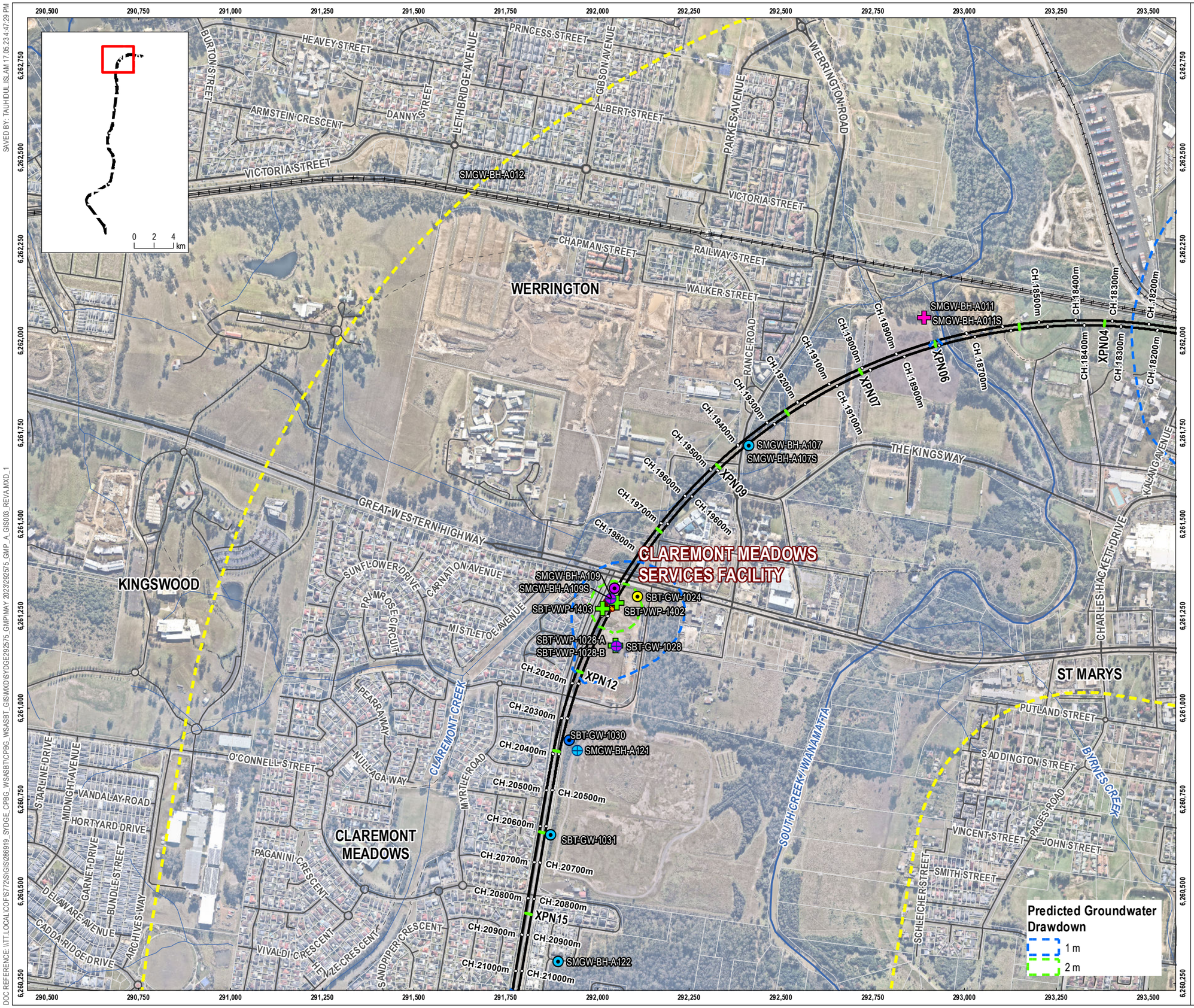

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Existing VWP
- Proposed VWP

Existing Monitoring Bore
- Alluvium/Bedrock
- Bedrock
- Residual
- Residual/Bedrock

Destroyed/ Lost/ Unable to be Accessed Monitoring Bore
- Bedrock
- Residual

- Project Alignment
- Project Alignment Chainage
- Project Alignment Cross Passage
- Project Alignment Structure
- Railway
- Major Road
- Minor Road
- Track
- Path
- Perennial Watercourse
- Non-perennial Watercourse
- Cadastral Boundary
- Project Alignment Buffer (1 km)

SOURCE
Investigation locations compiled by Tetra Tech Coffey.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, rail, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date 14-06-2022).

N

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-3

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

Groundwater Monitoring Plan

TETRA TECH COFFEY

DATE: **17.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_GMP_A_FA-3_GIS_REVA**

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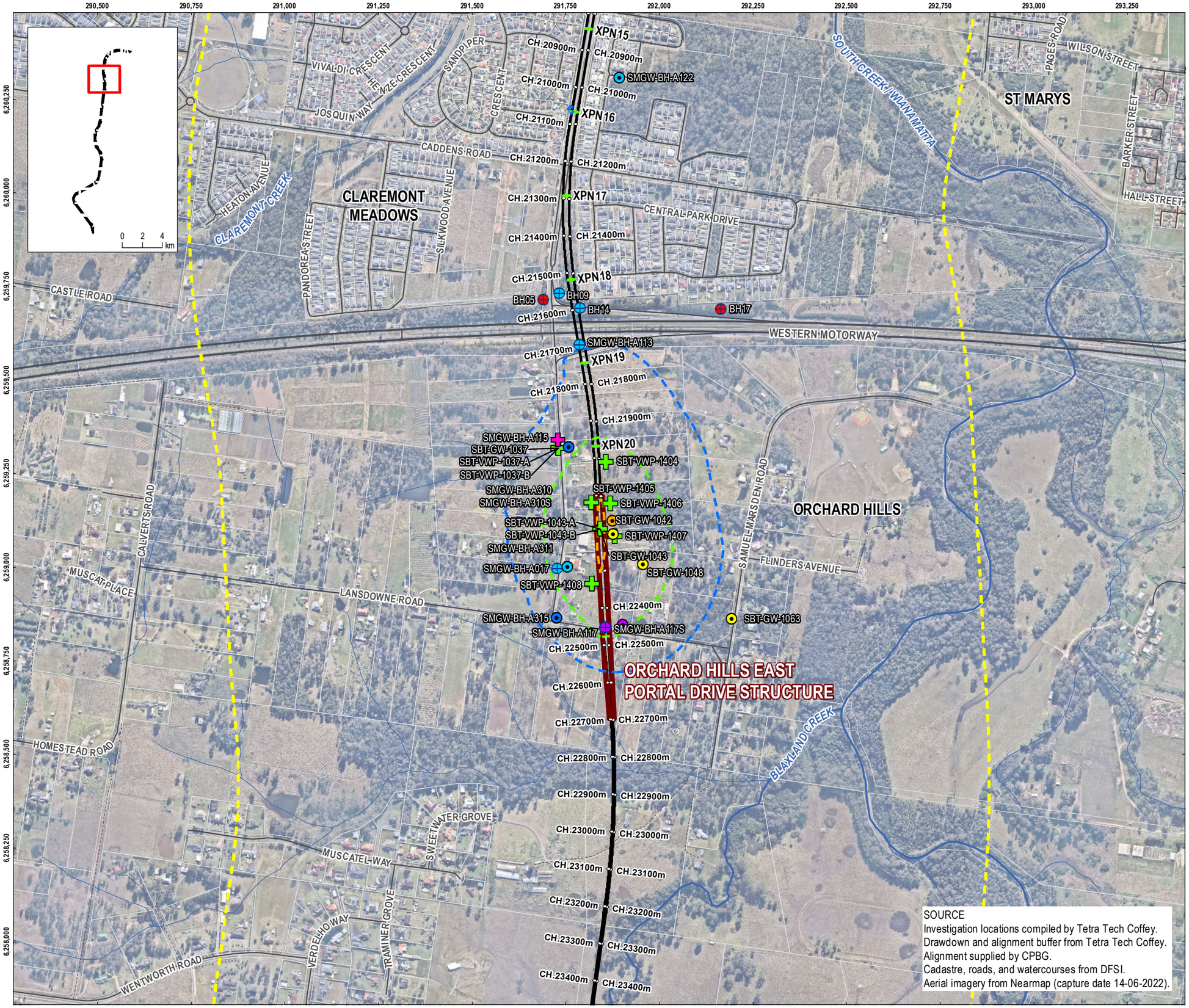

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Existing VWP
- Proposed VWP

Existing Monitoring Bore
- Alluvium
- Alluvium/Bedrock
- Bedrock
- Residual
- Residual/Bedrock

Destroyed/ Lost/ Unable to be Accessed Monitoring Bore
- Bedrock
- Residual
- Screened Lithology TBC

- Project Alignment
- Project Alignment Chainage
- Project Alignment Cross Passage
- Project Alignment Structure
- Major Road
- Minor Road
- Track
- Path
- Perennial Watercourse
- Non-perennial Watercourse
- Cadastral Boundary
- Project Alignment Buffer (1 km)

Predicted Groundwater Drawdown
- 1 m
- 2 m
- 5 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-4

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

Groundwater Monitoring Plan

TETRA TECH COFFEY

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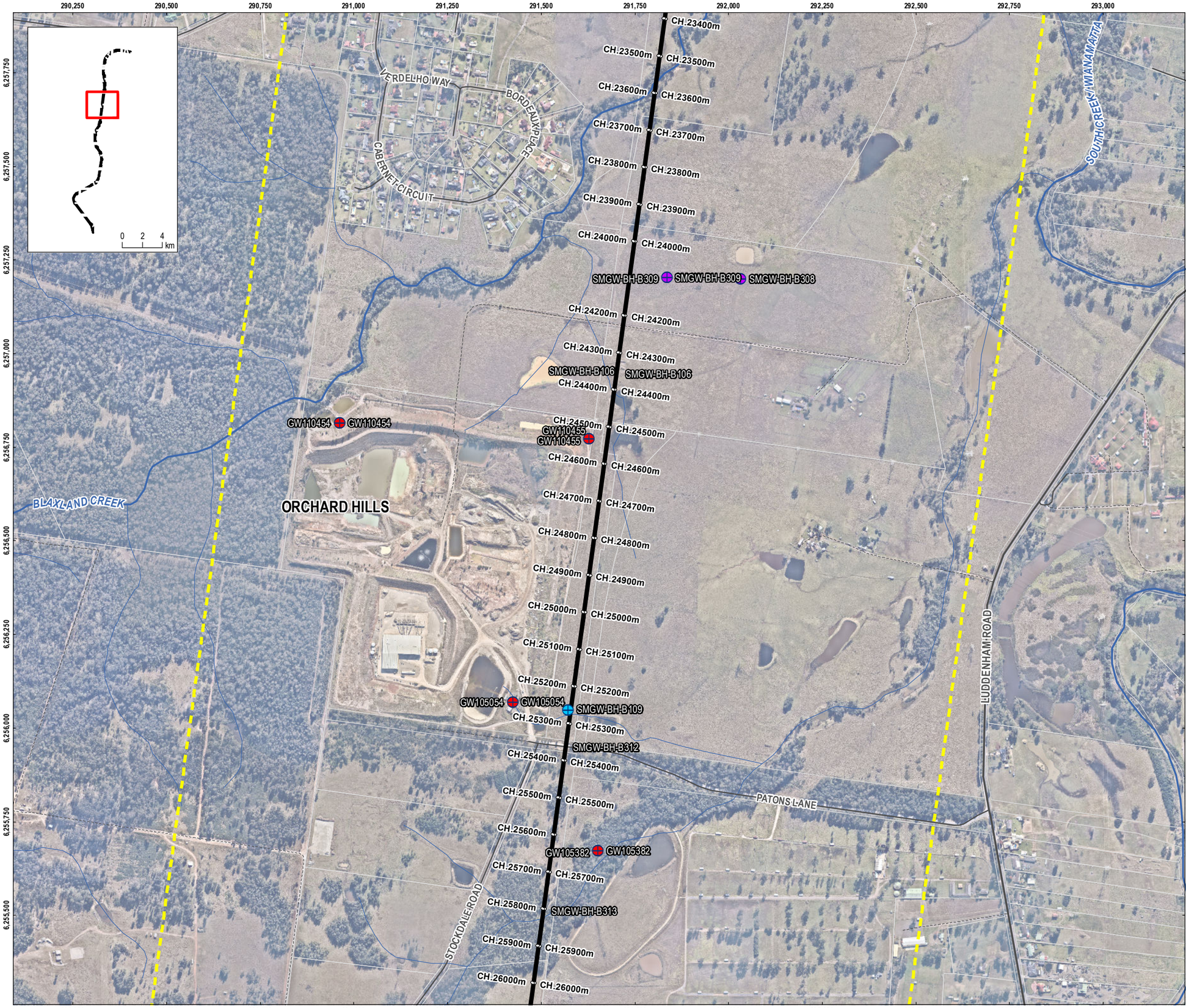

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Destroyed/ Lost/ Unable to be Accessed Monitoring Bore

- Bedrock
- Residual
- Screened Lithology TBC
- Project Alignment
- Project Alignment Chainage
- Major Road
- Minor Road
- Track
- Perennial Watercourse
- Non-perennial Watercourse
- Cadastral Boundary
- Project Alignment Buffer (1 km)

SOURCE
Investigation locations compiled by Tetra Tech Coffey.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date 14-06-2022).

N

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-5

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

Groundwater Monitoring Plan

TETRA TECH COFFEY

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CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Existing VWP
- Existing Monitoring Bore
  - Bedrock
  - Residual/Bedrock
- Destroyed/ Lost/ Unable to be Accessed Monitoring Bore
  - Residual
- Project Alignment
- Project Alignment Chainage
- Major Road
- Minor Road
- Track
- Non-perennial Watercourse
- Cadastral Boundary
- Project Alignment Buffer (1 km)

SOURCE
Investigation locations compiled by Tetra Tech Coffey.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date 14-06-2022).

N

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-6

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

Groundwater Monitoring Plan

TETRA TECH COFFEY

DATE: **17.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_GMP_A_FA-6_GIS_REVA**

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CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Existing Monitoring Bore
- Screened Lithology TBC

Destroyed/ Lost/ Unable to be Accessed Monitoring Bore
- Screened Lithology TBC
- Project Alignment
- Project Alignment Chainage
- Major Road
- Minor Road
- Track
- Perennial Watercourse
- Non-perennial Watercourse
- Cadastral Boundary
- Project Alignment Buffer (1 km)

SOURCE
Investigation locations compiled by Tetra Tech Coffey.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date 14-06-2022).

N

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

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WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-7

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

Groundwater Monitoring Plan

TETRA TECH COFFEY

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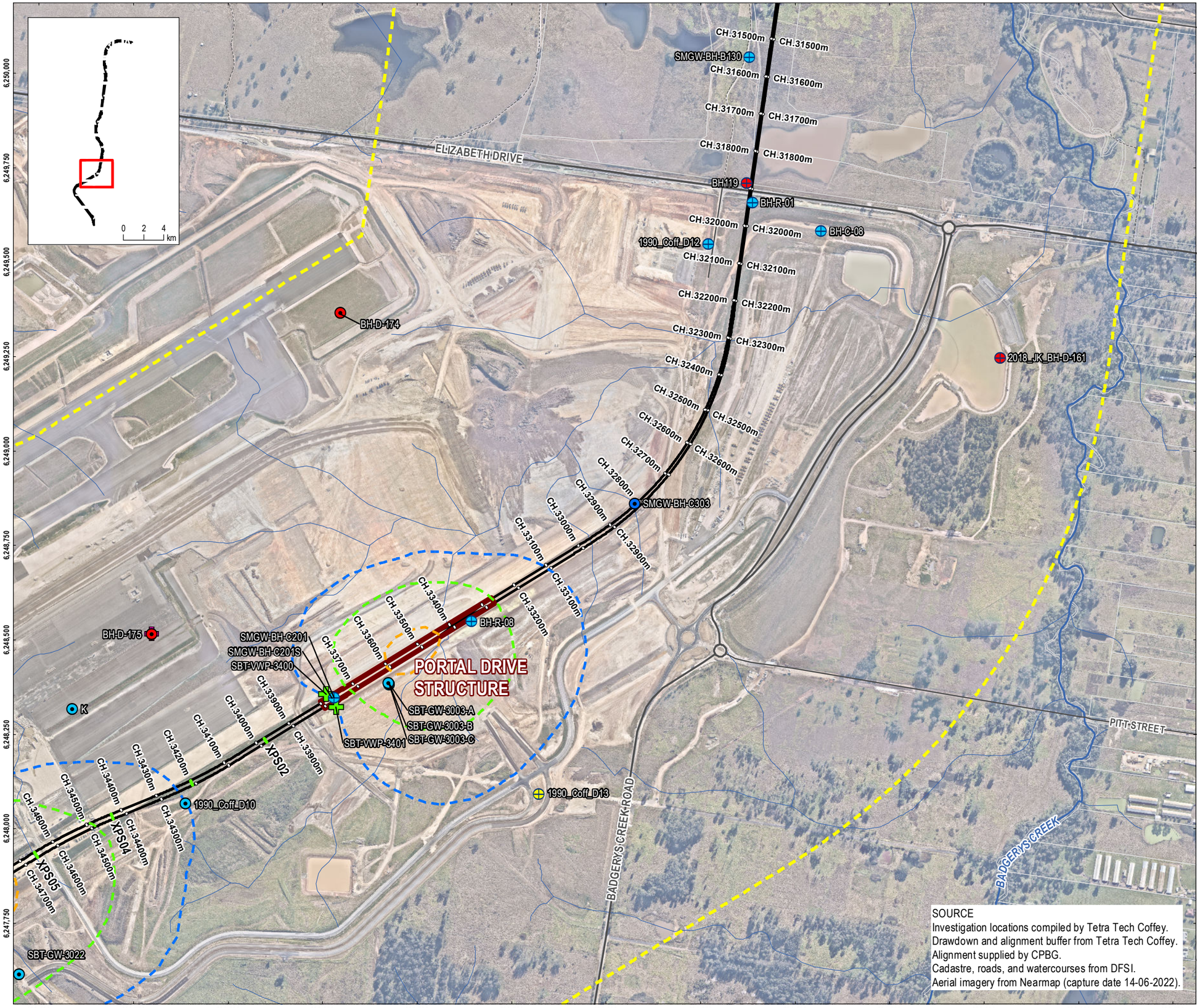

SOURCE
Investigation locations compiled by Tetra Tech Coffey.
Drawdown and alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date 14-06-2022).

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Existing VWP
- Proposed VWP

Existing Monitoring Bore
- Bedrock
- Residual/Bedrock
- Screened Lithology TBC

Destroyed/ Lost/ Unable to be Accessed Monitoring Bore
- Alluvium/Bedrock
- Bedrock
- Screened Lithology TBC

- Project Alignment
- Project Alignment Chainage
- Project Alignment Cross Passage
- Project Alignment Structure
- Major Road
- Minor Road
- Track
- Perennial Watercourse
- Non-perennial Watercourse
- Cadastral Boundary
- Project Alignment Buffer (1 km)

Predicted Groundwater Drawdown
- 1 m
- 2 m
- 5 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-8

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

Groundwater Monitoring Plan

TETRA TECH COFFEY

DATE: **17.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_GMP_A_FA-8_GIS_REVA**

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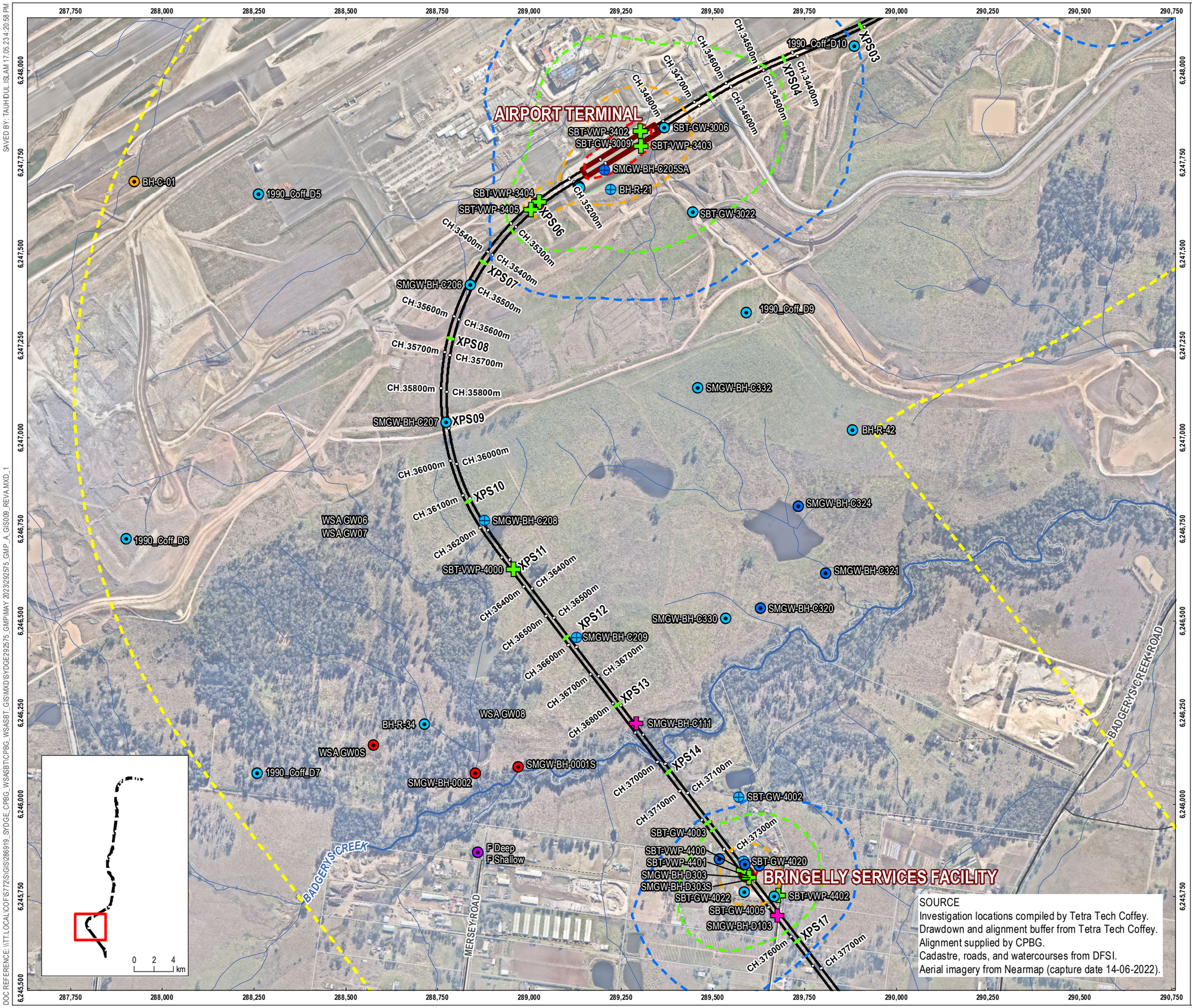

SOURCE
Investigation locations compiled by Tetra Tech Coffey.
Drawdown and alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date 14-06-2022).

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Existing VWP
- Proposed VWP

Existing Monitoring Bore
- Alluvium
- Bedrock
- Residual
- Residual/Bedrock
- Screened Lithology TBC

Destroyed/ Lost/ Unable to be Accessed Monitoring Bore
- Bedrock
- Residual/Bedrock

- Project Alignment
- Project Alignment Chainage
- Project Alignment Cross Passage
- Project Alignment Structure
- Major Road
- Minor Road
- Track
- Perennial Watercourse
- Non-perennial Watercourse
- Cadastral Boundary
- Project Alignment Buffer (1 km)

Predicted Groundwater Drawdown
- 1 m
- 2 m
- 5 m
- 10 m

N

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-9

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

Groundwater Monitoring Plan

TETRA TECH COFFEY

DATE: **17.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_GMP_A_FA-9_GIS_REVA**

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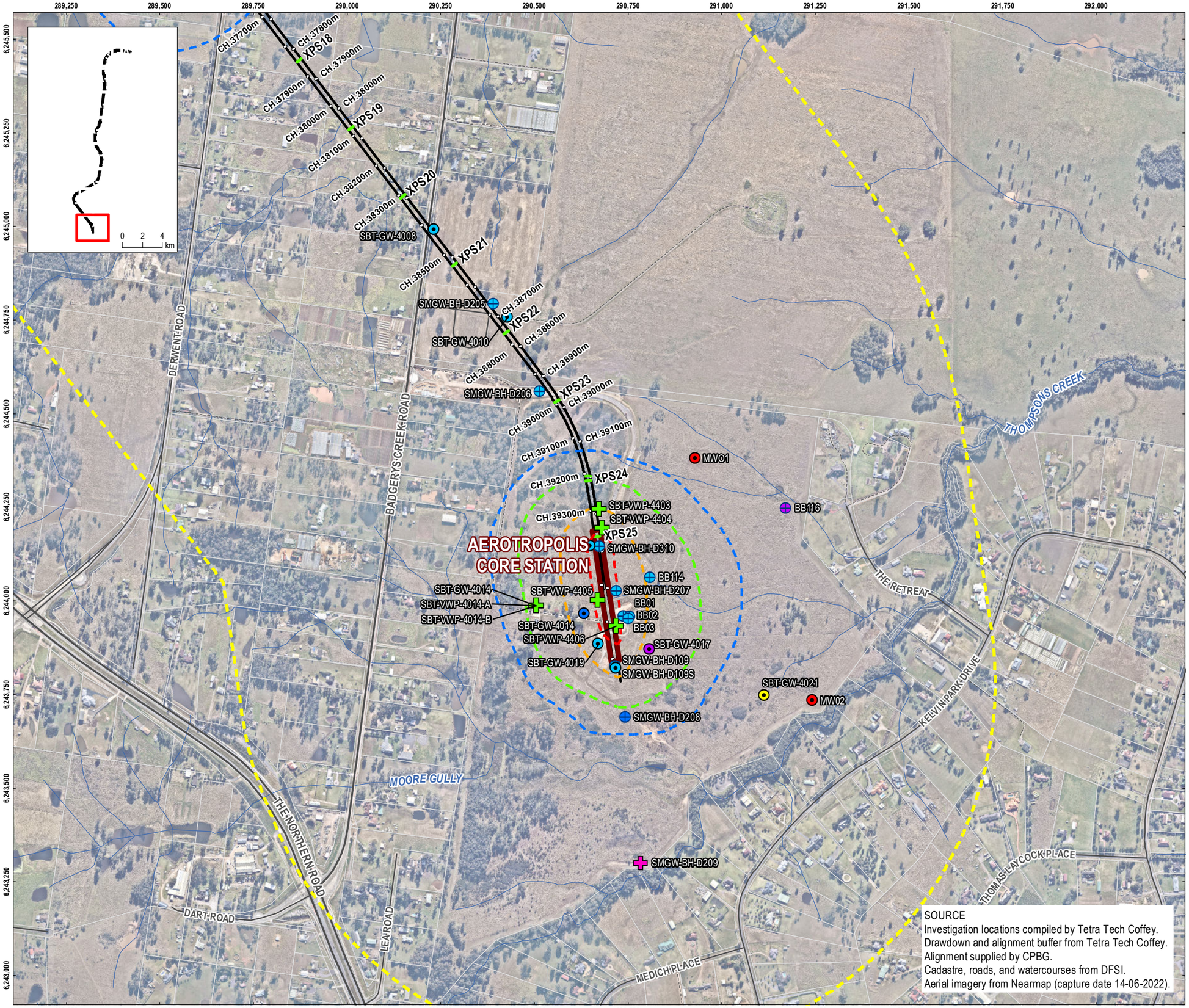

SOURCE
Investigation locations compiled by Tetra Tech Coffey.
Drawdown and alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Cadastre, roads, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date 14-06-2022).

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

- Existing VWP
- Proposed VWP

Existing Monitoring Bore
- Alluvium/Bedrock
- Bedrock
- Residual
- Residual/Bedrock
- Screened Lithology TBC

Destroyed/ Lost/ Unable to be Accessed Monitoring Bore
- Bedrock
- Residual
- Residual/Bedrock

- Project Alignment
- Project Alignment Chainage
- Project Alignment Cross Passage
- Project Alignment Structure
- Major Road
- Minor Road
- Track
- Non-perennial Watercourse
- Cadastral Boundary
- Project Alignment Buffer (1 km)

Predicted Groundwater Drawdown
- 1 m
- 2 m
- 5 m
- 10 m

N

0 200 400 m

SCALE **1:10,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE A-10

Groundwater Monitoring Locations - Existing and Proposed for Site Investigation Works

Groundwater Monitoring Plan

TETRA TECH COFFEY

DATE: **17.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_GMP_A_FA-10_GIS_REVA**

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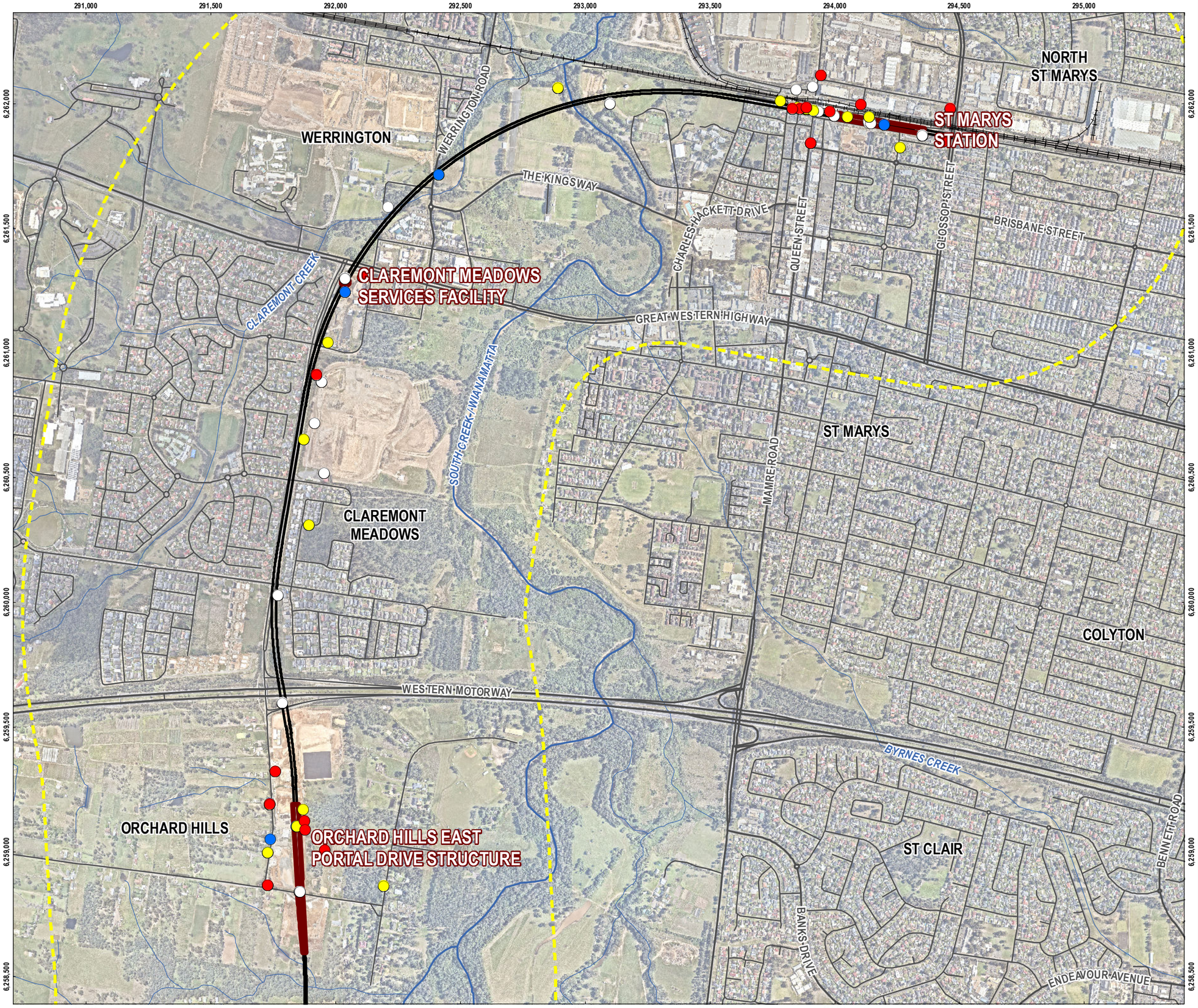

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum pH (Field)

- <6
- 6 to 6.99
- 7 to 7.99
- 8 to 8.99
- >9
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Lowest pH Reported where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads, rail, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE 1:15,000
PAGE SIZE: A3
PROJECTION: GDA2020 MGA Zone 56

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WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 1A

Groundwater pH
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: 18.05.23 PROJECT: 754-SYDGE292575 FILE: 292575_HIR_F001A_GIS_REVD

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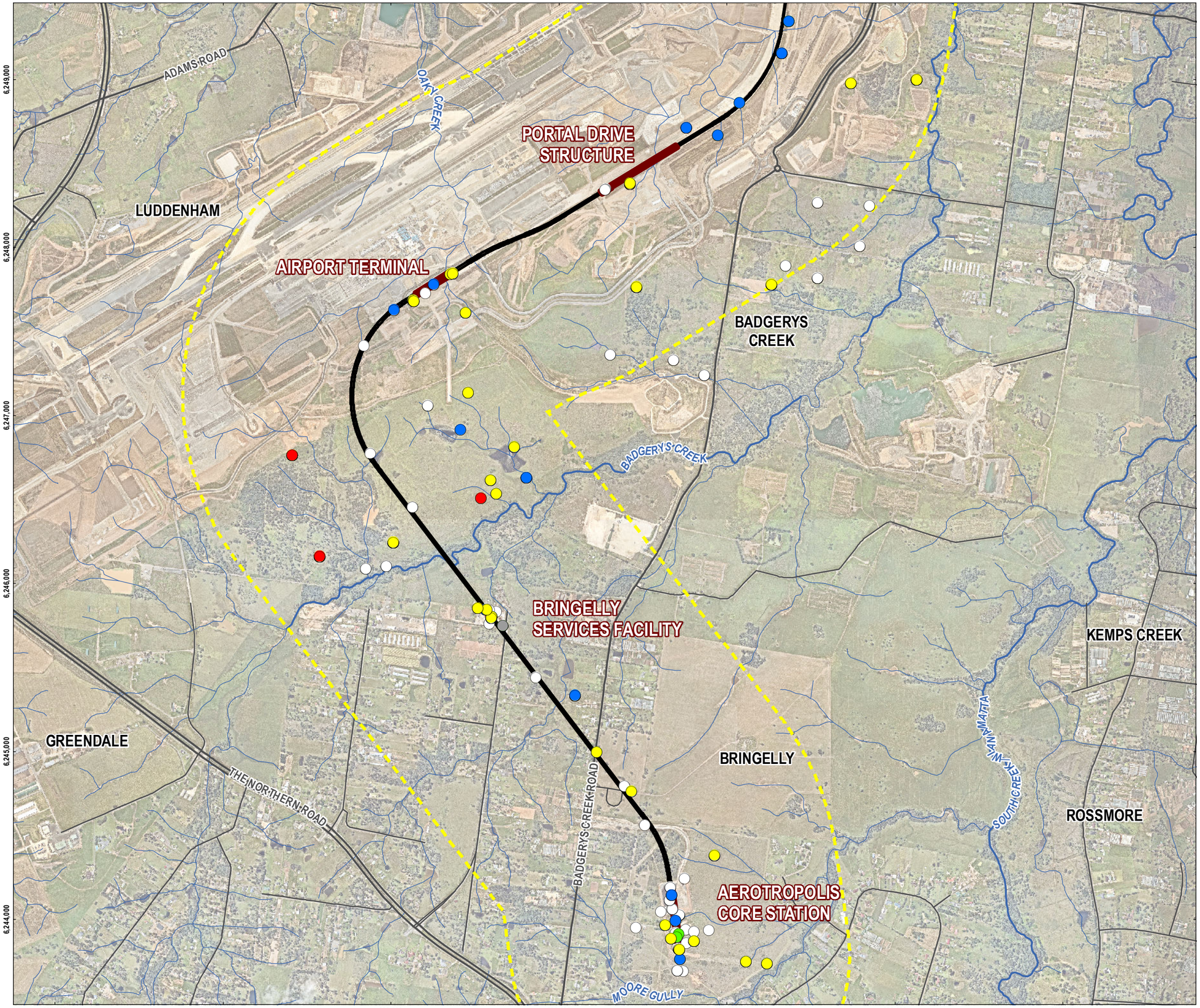

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum pH (Field)

- <6
- 6 to 6.99
- 7 to 7.99
- 8 to 8.99
- >9
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Lowest pH Reported where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 1B

Groundwater pH
Hydrogeological Interpretive Report

TETRA TECH COFFEY

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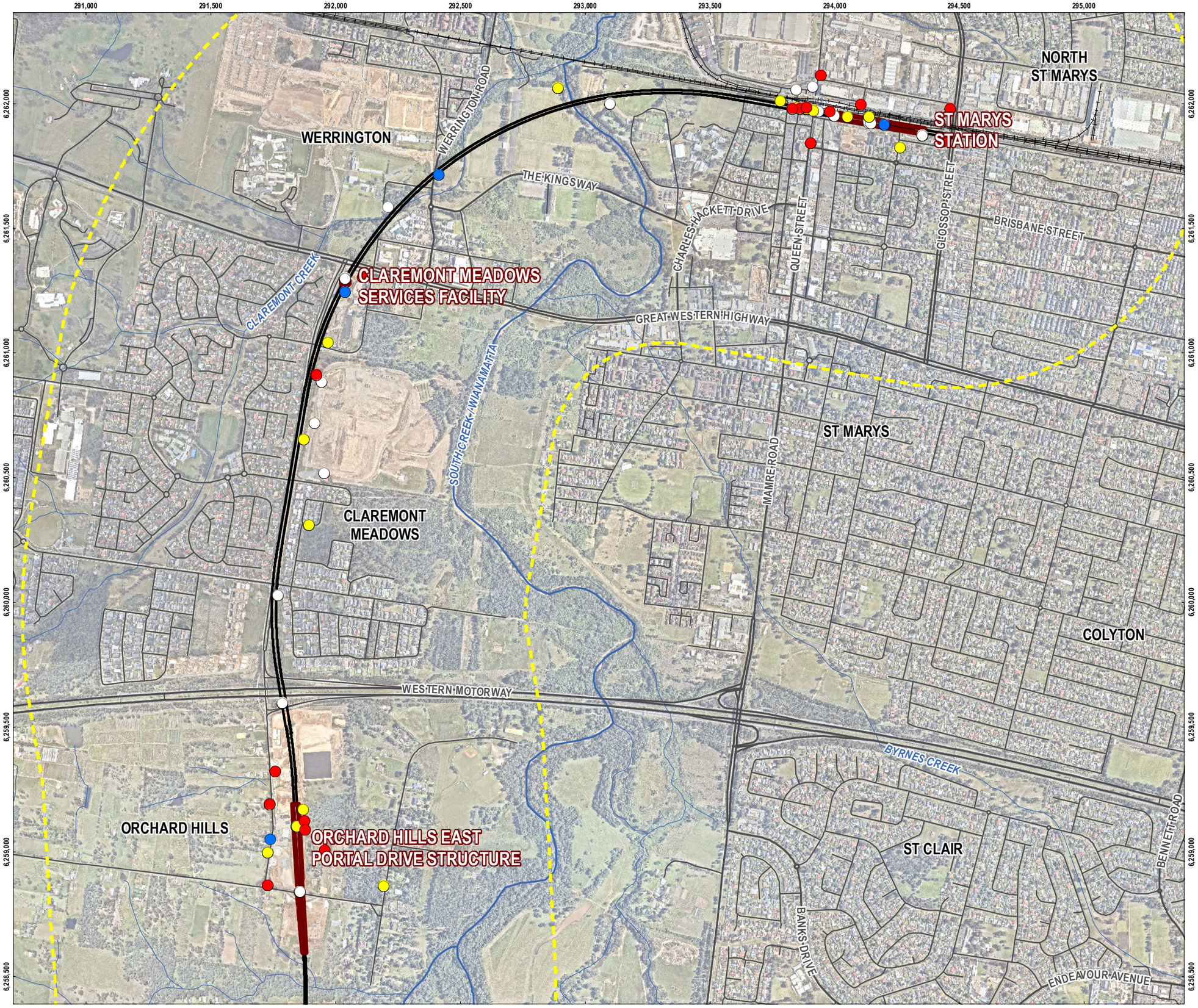

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum pH (Field)

- <6
- 6 to 6.99
- 7 to 7.99
- 8 to 8.99
- >9
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Lowest pH Reported where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads, rail, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date 17-10-2021).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 1A

Groundwater pH
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F001A_GIS_REVD**

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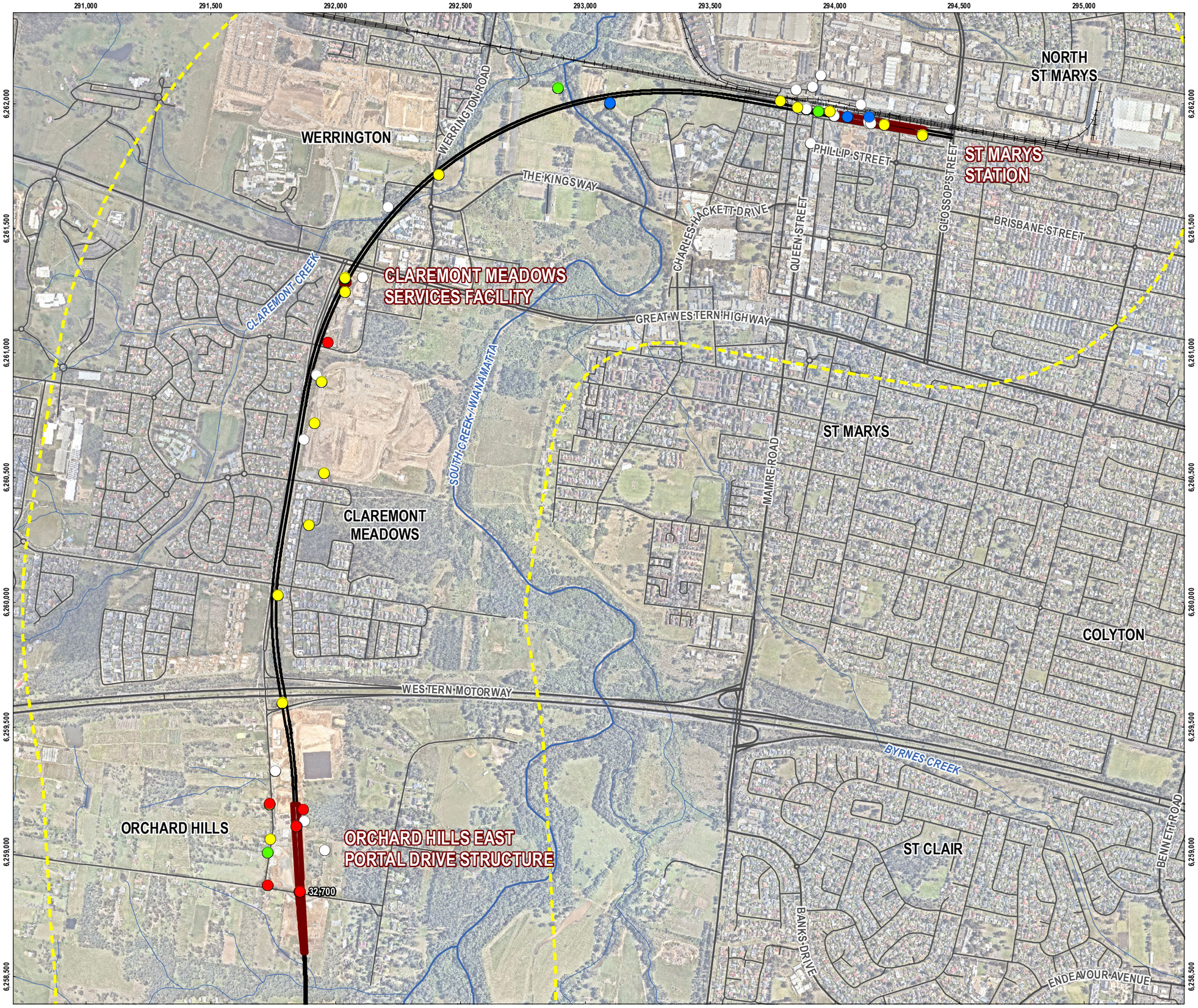

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Electrical Conductivity

- >30,000µS/cm
- 15,000µS/cm to 30,000µS/cm
- 5,000µS/cm to <15,000µS/cm
- 1,000µS/cm to <5,000µS/cm
- <1,000µS/cm
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analyics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads, rail, and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 2A

Groundwater Electrical Conductivity Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F002A_GIS_REVD**

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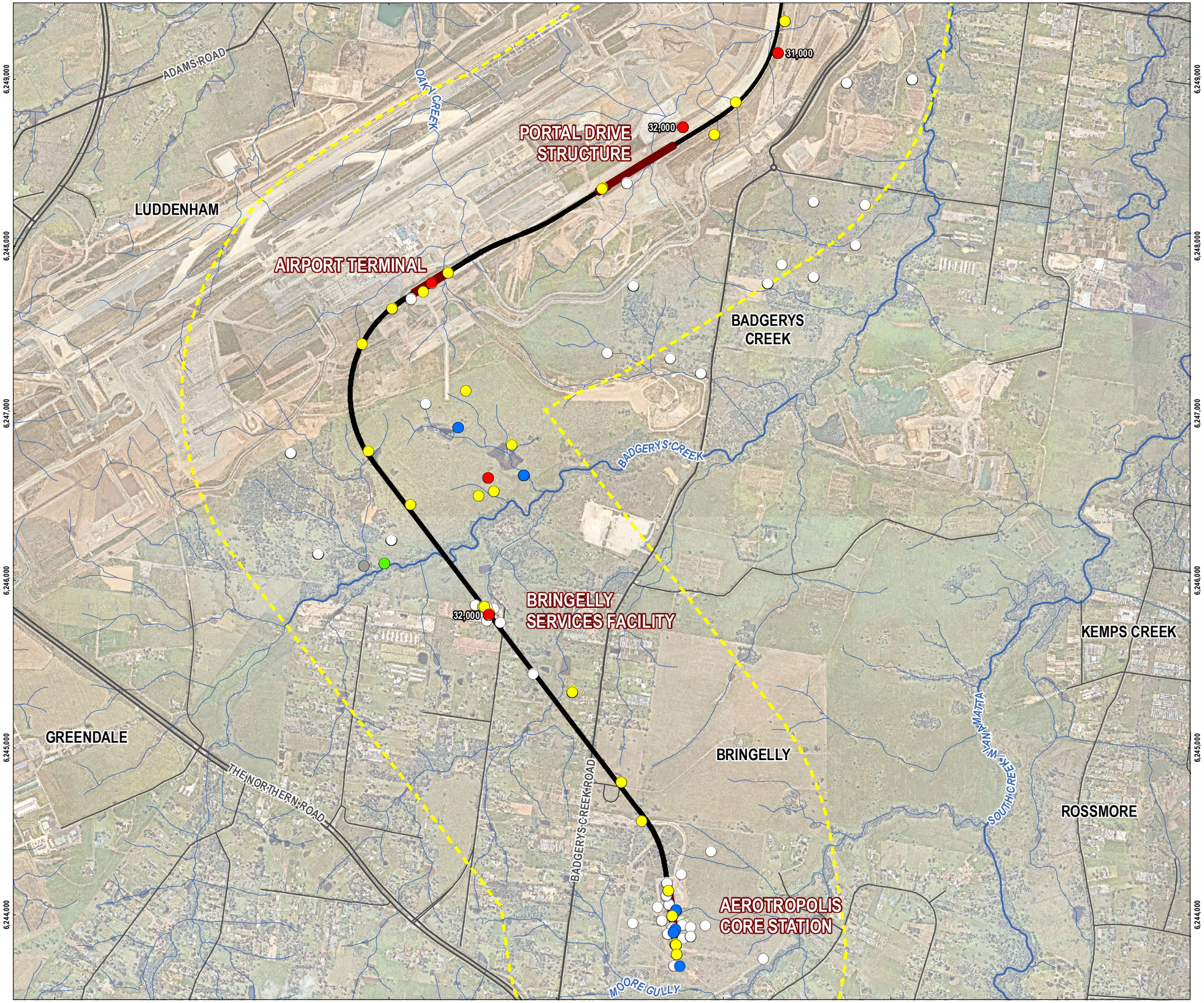

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Electrical Conductivity

- >30,000µS/cm
- 15,000µS/cm to 30,000µS/cm
- 5,000µS/cm to <15,000µS/cm
- 1,000µS/cm to <5,000µS/cm
- <1,000µS/cm
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 2B

Groundwater Electrical Conductivity Hydrogeological Interpretive Report

TETRA TECH COFFEY

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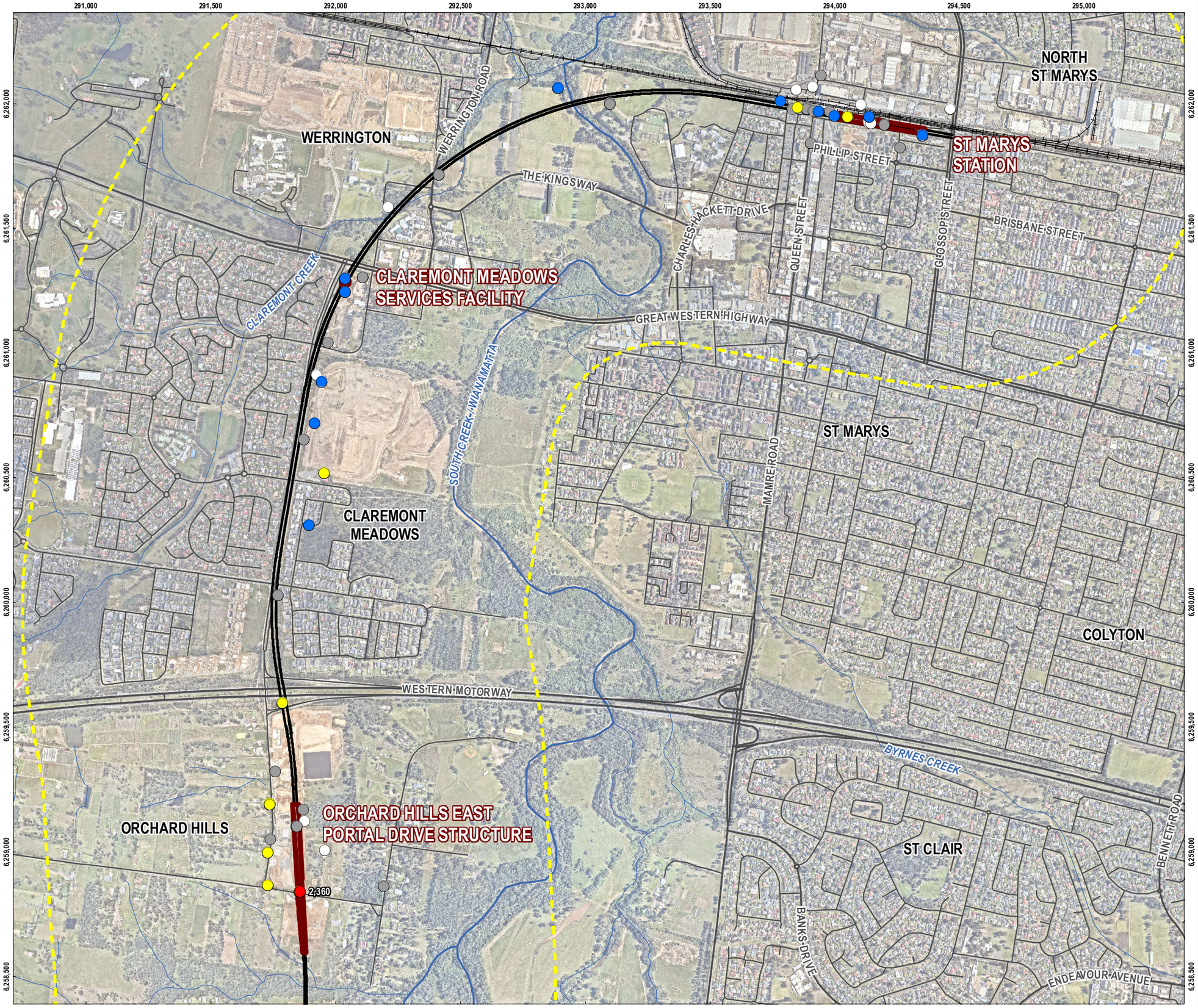

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Aluminium Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 10µg/L to <100µg/L
- <10µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 3A

Groundwater Aluminium Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

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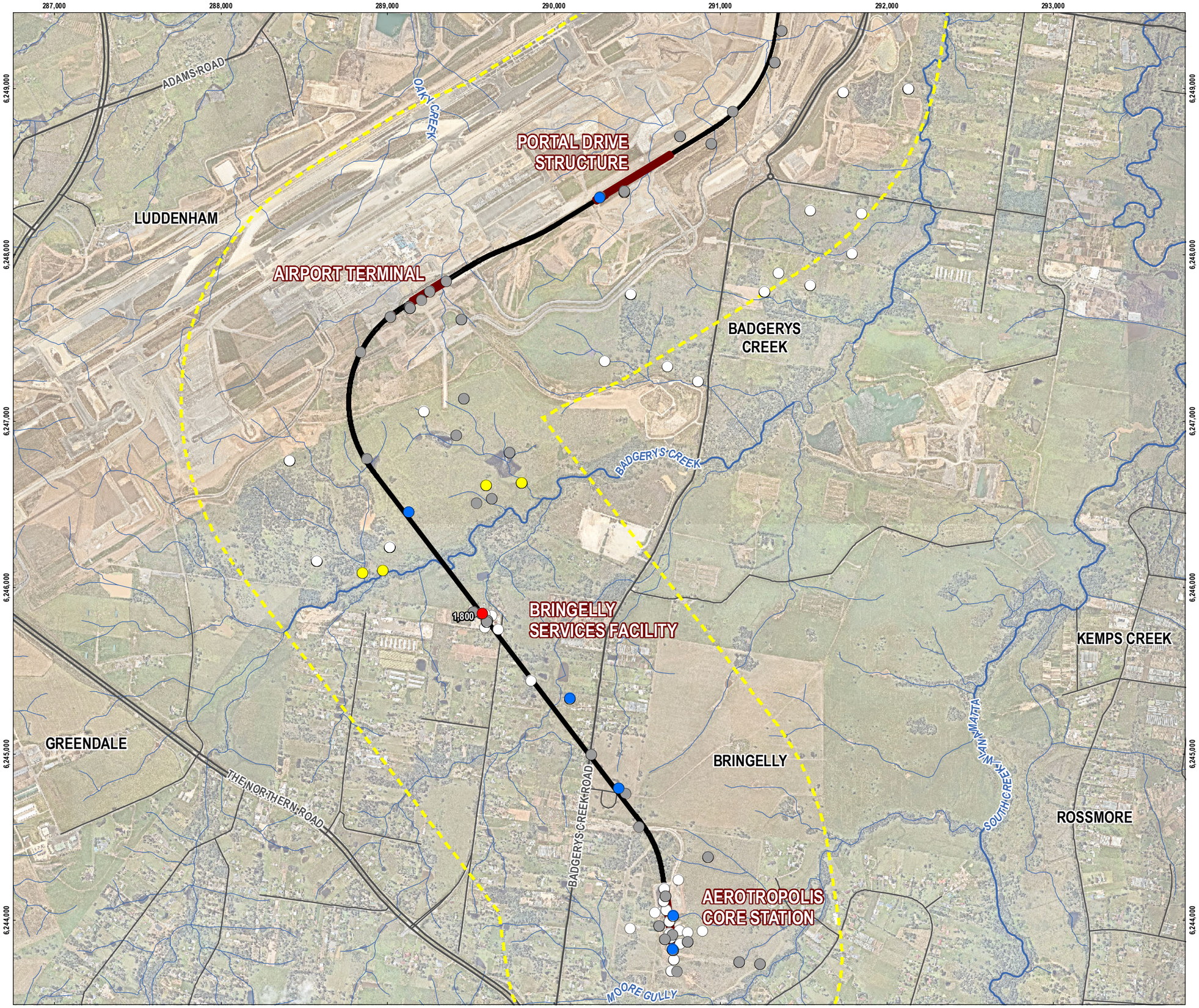

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Aluminium Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 10µg/L to <100µg/L
- <10µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 3B

Groundwater Aluminium Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F003B_GIS_REVD**

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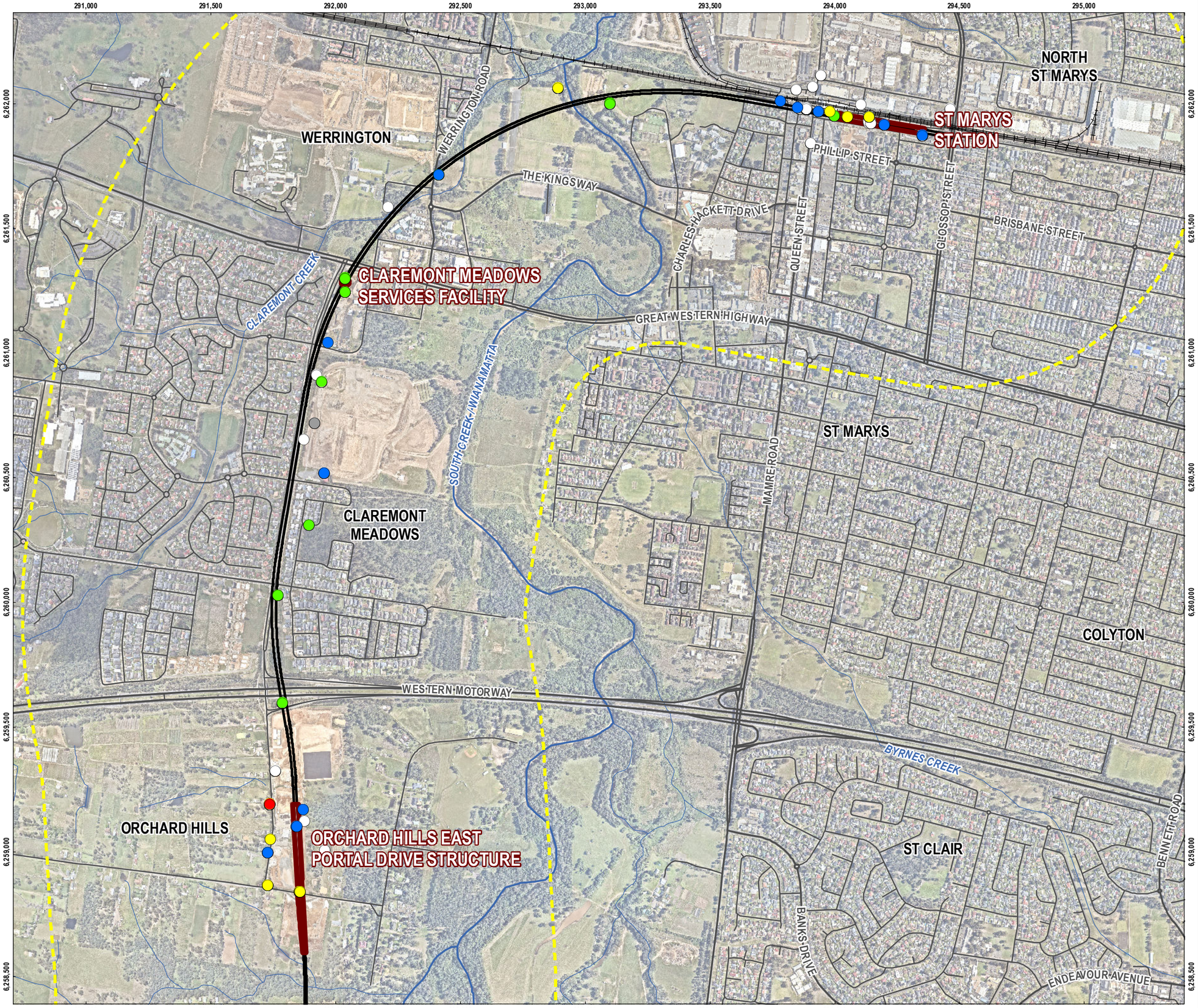

LEGEND

Maximum Cobalt Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 10µg/L to <100µg/L
- 1.4µg/L to <10µg/L
- <1.4µg/L
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 4A

Groundwater Cobalt Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F004A_GIS_REVD**

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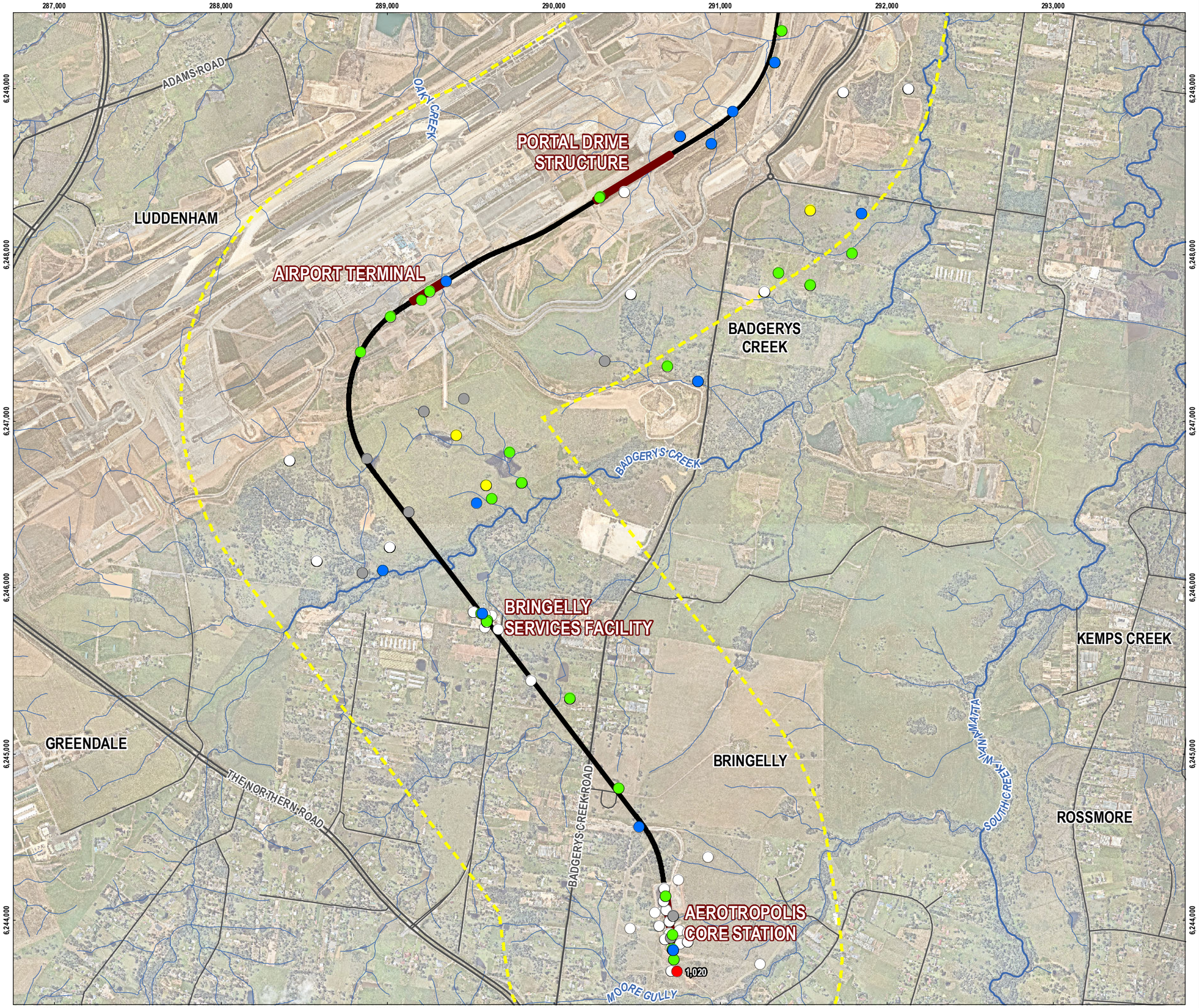

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Cobalt Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 10µg/L to <100µg/L
- 1.4µg/L to <10µg/L
- <1.4µg/L
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 4B

Groundwater Cobalt Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F004B_GIS_REVD**

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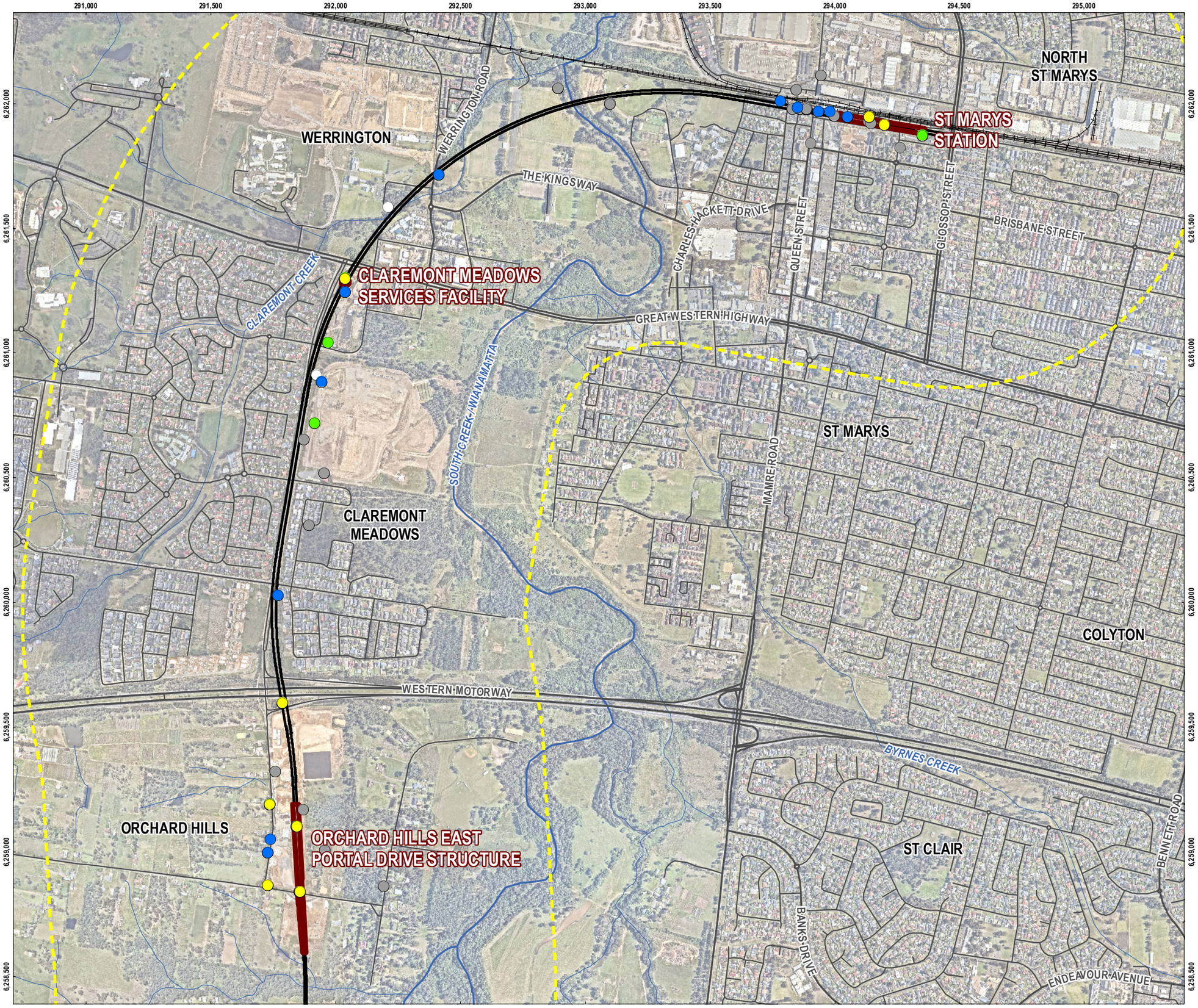

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Copper Concentration

- >100µg/L
- 10µg/L to 100µg/L
- 1.4µg/L to <10µg/L
- <1.4µg/L
- <LOR
- Not Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 5A

Groundwater Copper Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F005A_GIS_REVD**

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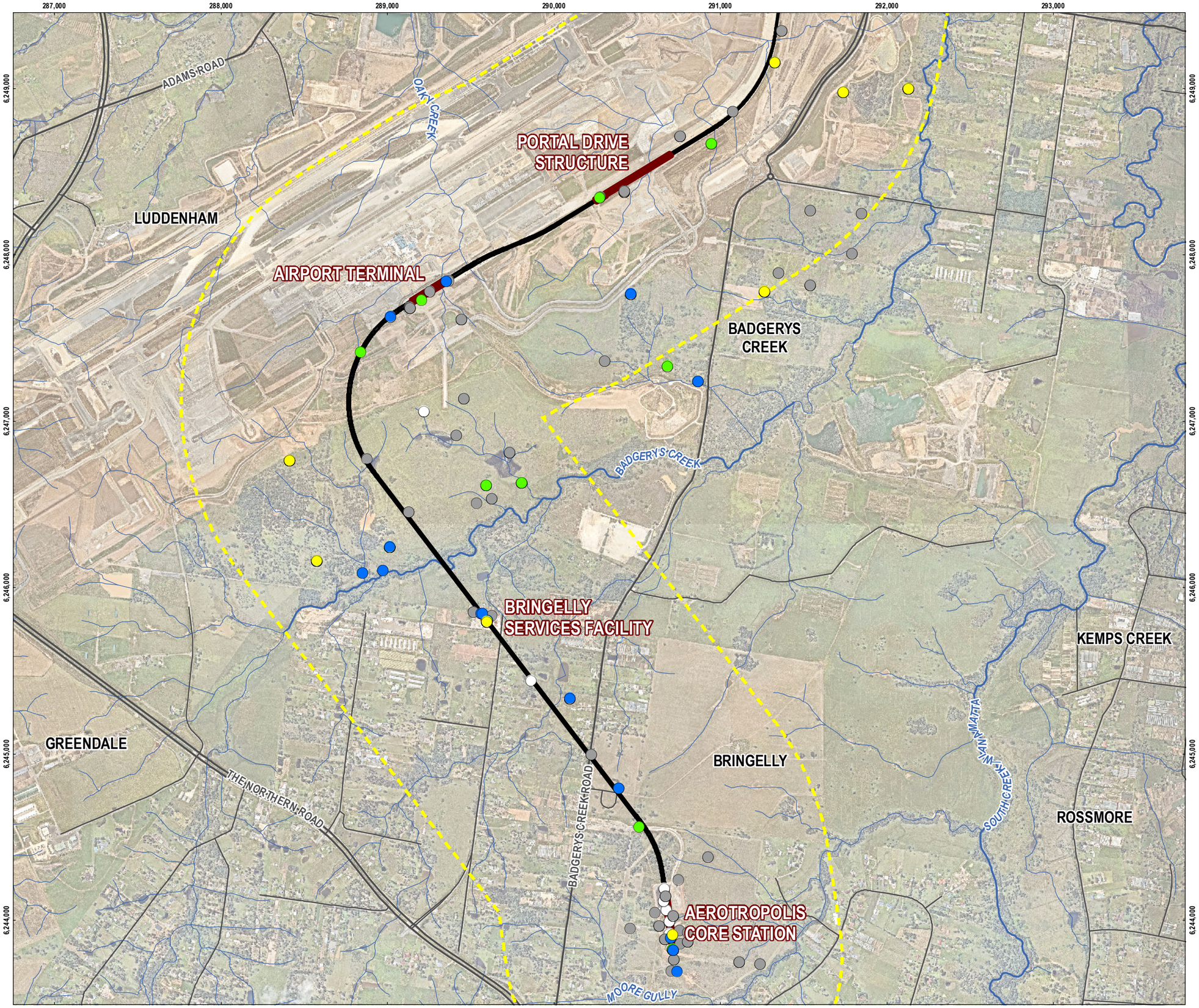

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Copper Concentration

- >100µg/L
- 10µg/L to 100µg/L
- 1.4µg/L to <10µg/L
- <1.4µg/L
- <LOR
- Not Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 5B

Groundwater Copper Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F005B_GIS_REVD**

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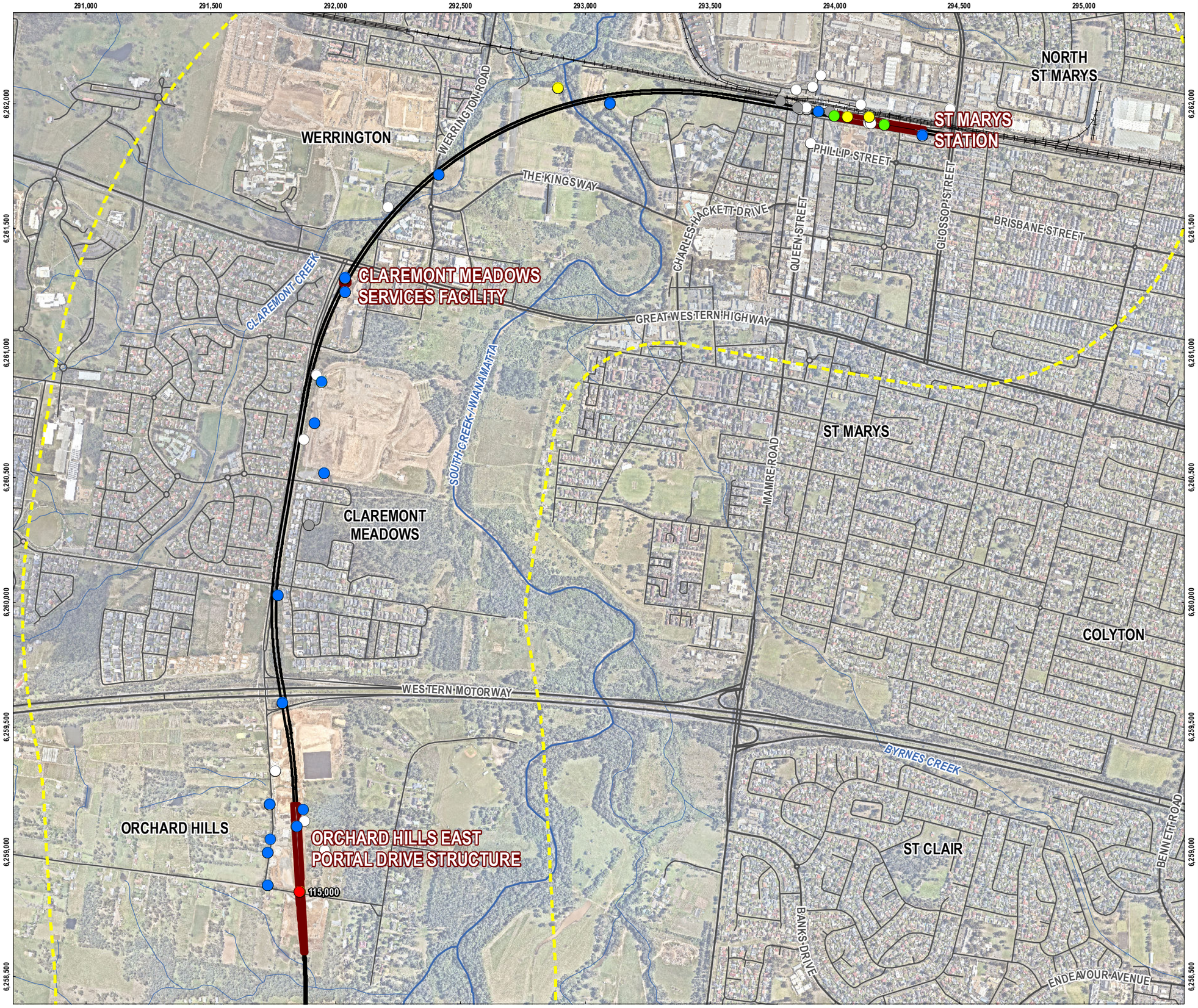

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Iron Concentration

- >100,000µg/L
- 10,000µg/L to 100,000µg/L
- 1,000µg/L to <10,000µg/L
- 100µg/L to <1,000µg/L
- <100µg/L
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 6A

Groundwater Iron Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F006A_GIS_REVD**

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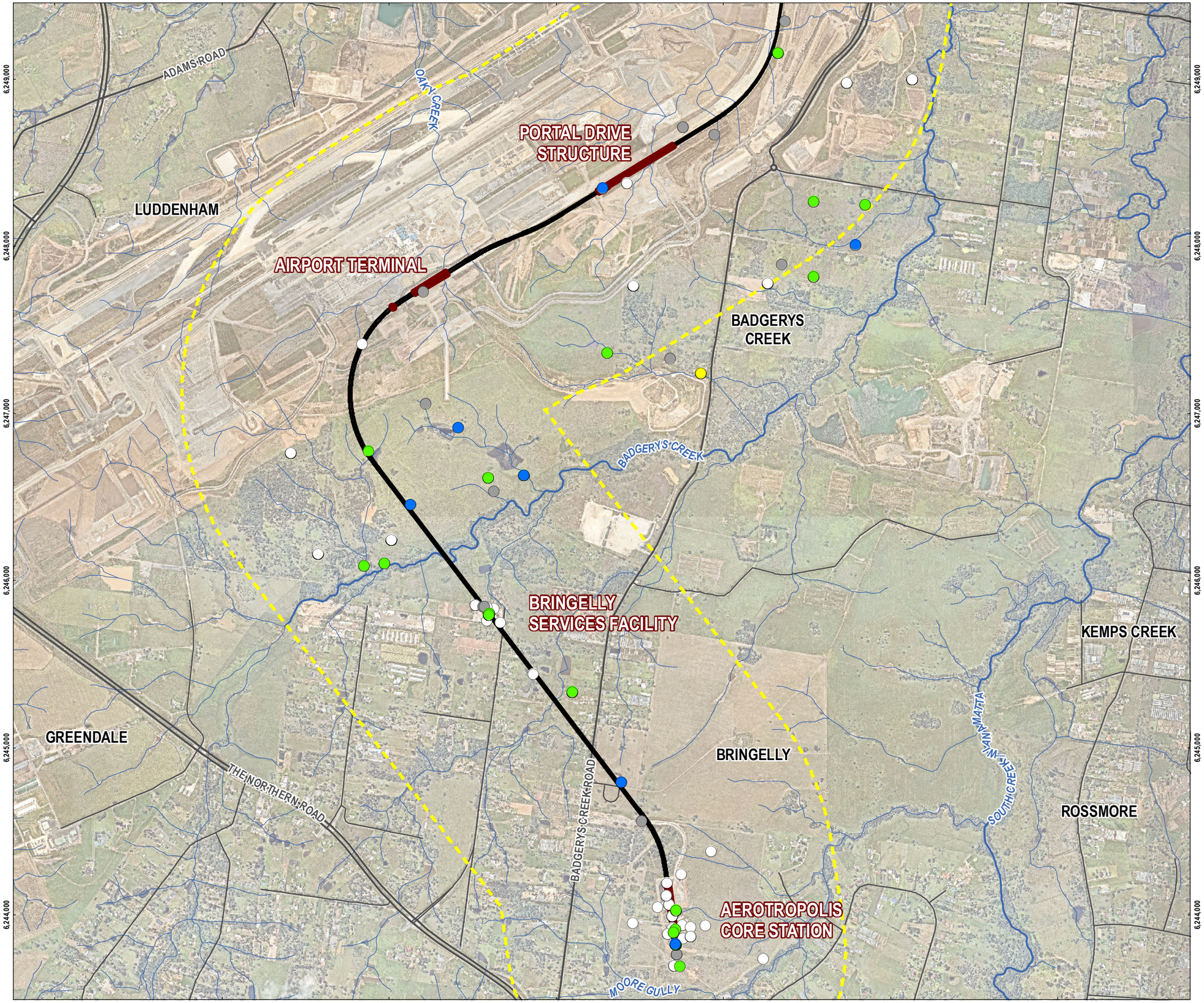

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Iron Concentration

- >100,000µg/L
- 10,000µg/L to 100,000µg/L
- 1,000µg/L to <10,000µg/L
- 100µg/L to <1,000µg/L
- <100µg/L
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 6B

Groundwater Iron Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F006B_GIS_REVC**

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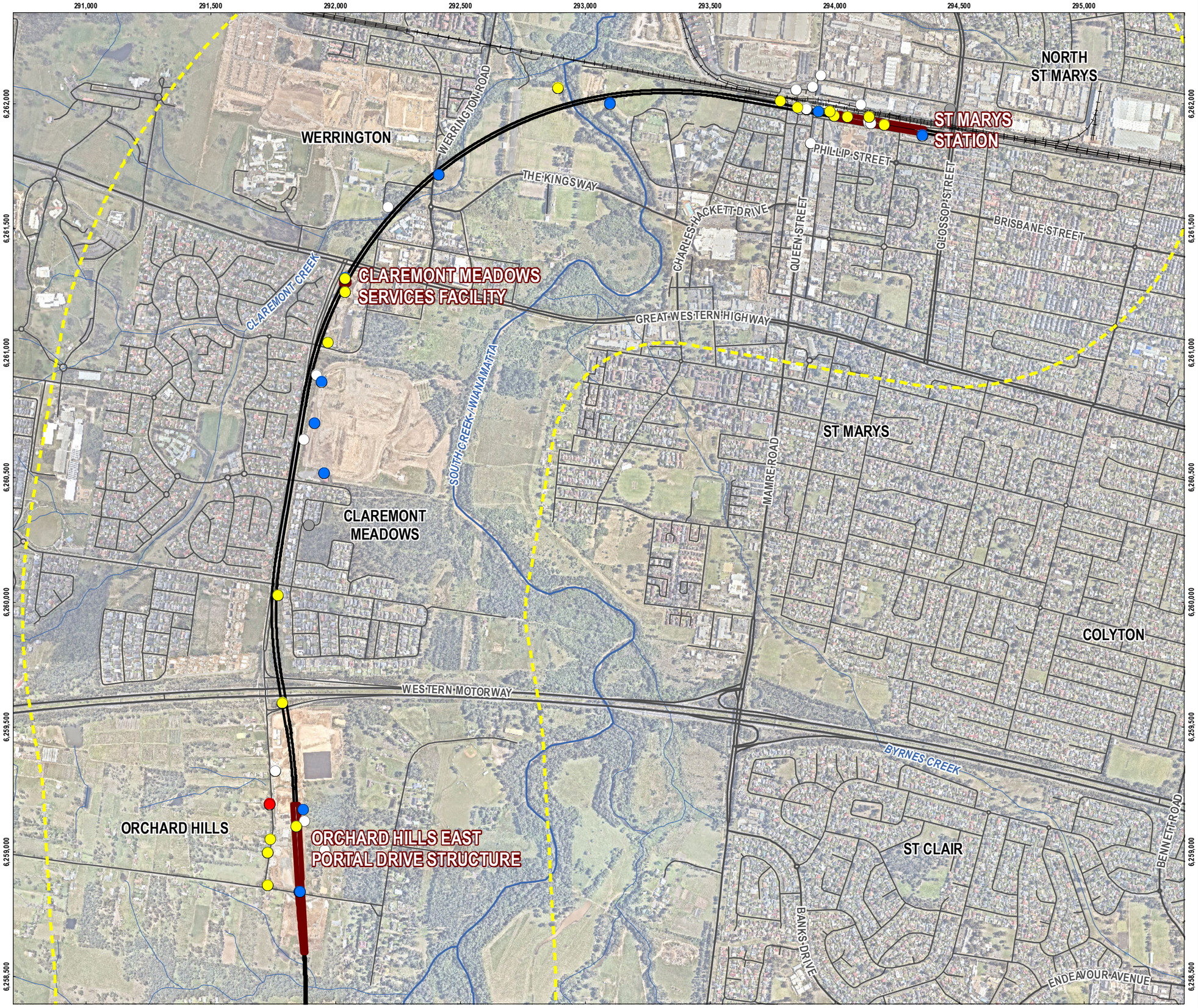

LEGEND

Maximum Manganese Concentation

- >10,000µg/L
- 1,000µg/L to 10,000µg/L
- 100µg/L to <1,000µg/L
- <100µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 7A

Groundwater Manganese Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F007A_GIS_REVC**

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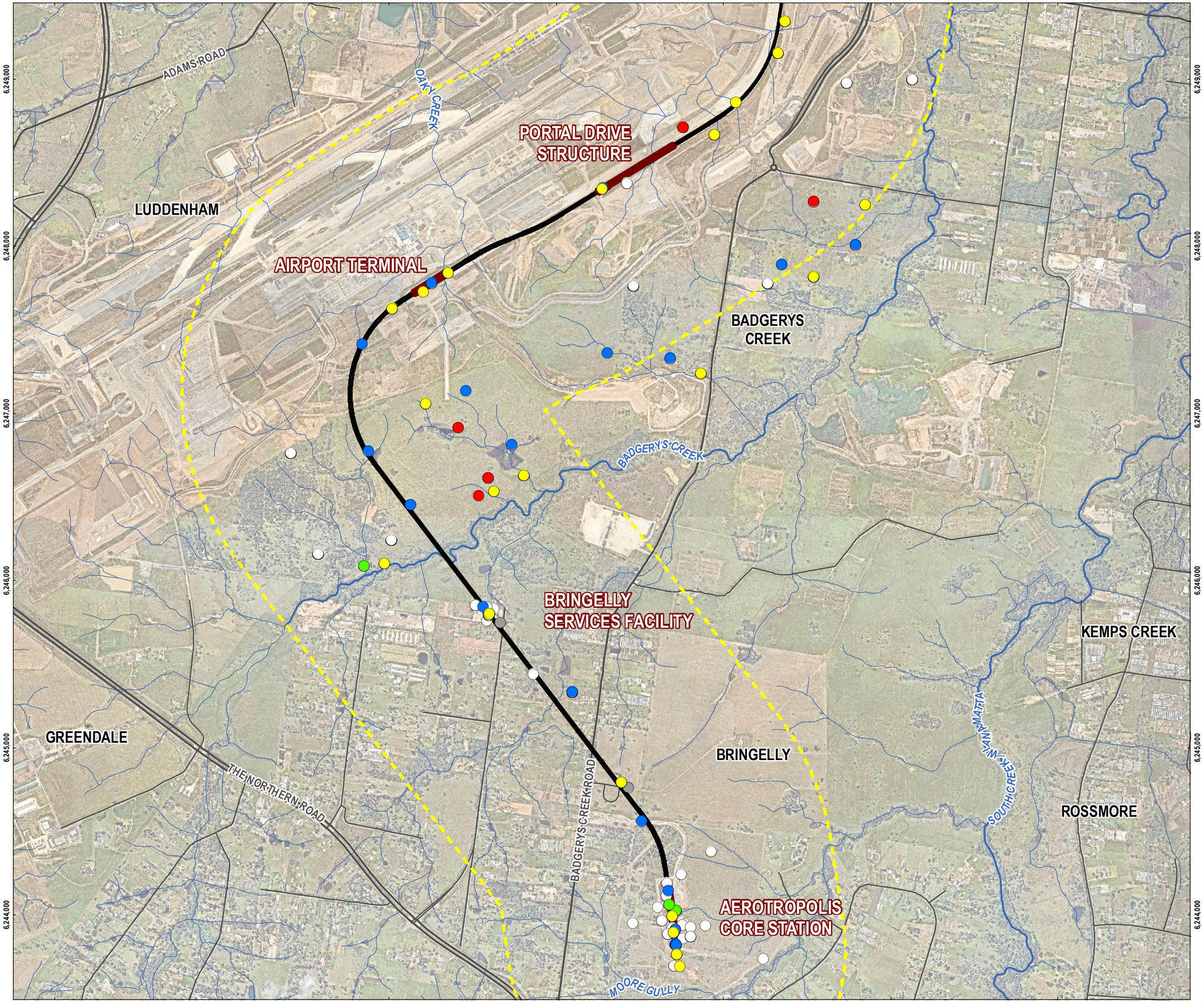

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Manganese Concentation

- >10,000µg/L
- 1,000µg/L to 10,000µg/L
- 100µg/L to <1,000µg/L
- <100µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2023).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 7B

Groundwater Manganese Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F007B_GIS_REVD**

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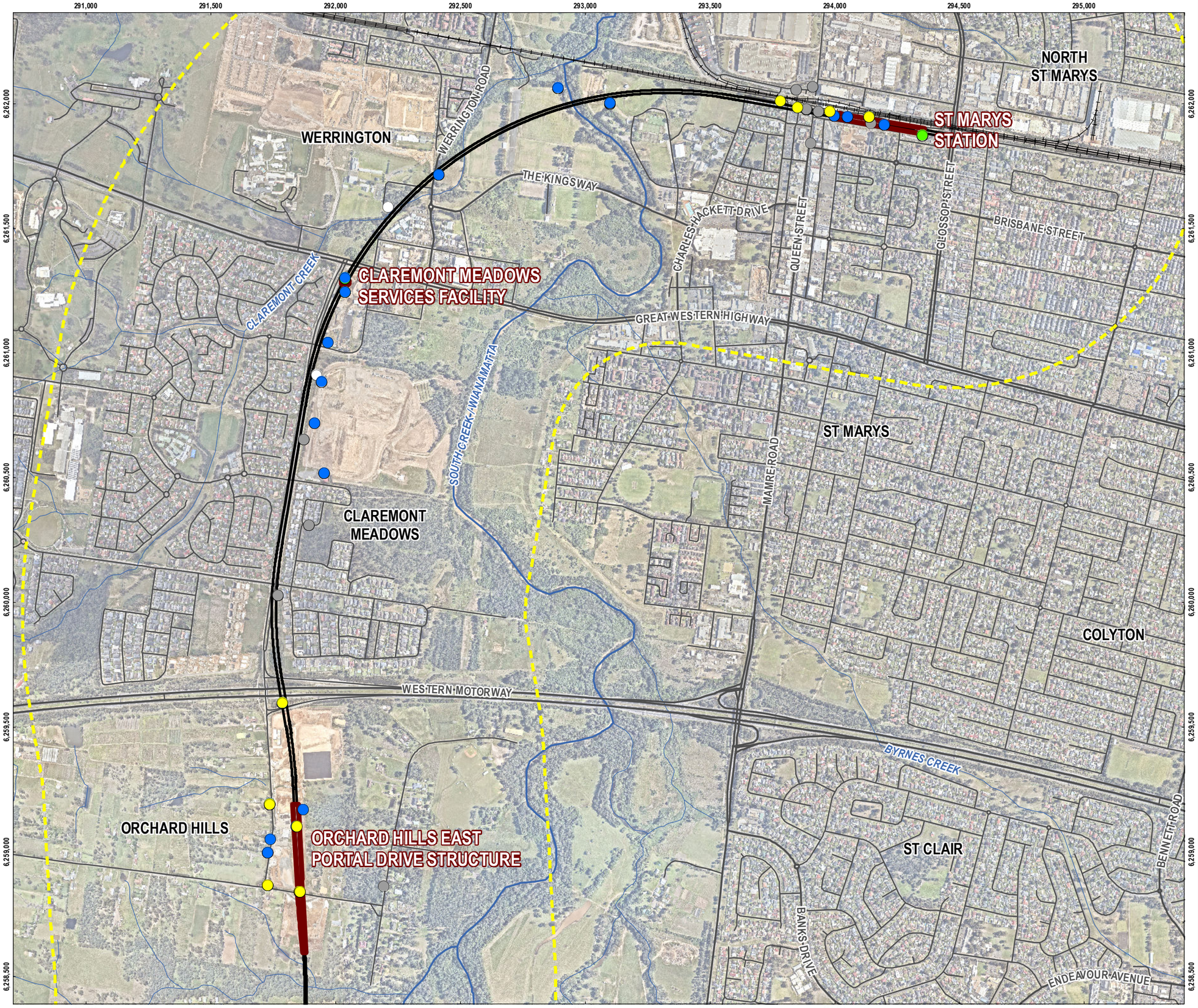

LEGEND

Maximum Zinc Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 8µg/L to <100µg/L
- <8µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 8A

Groundwater Zinc Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F008A_GIS_REVD**

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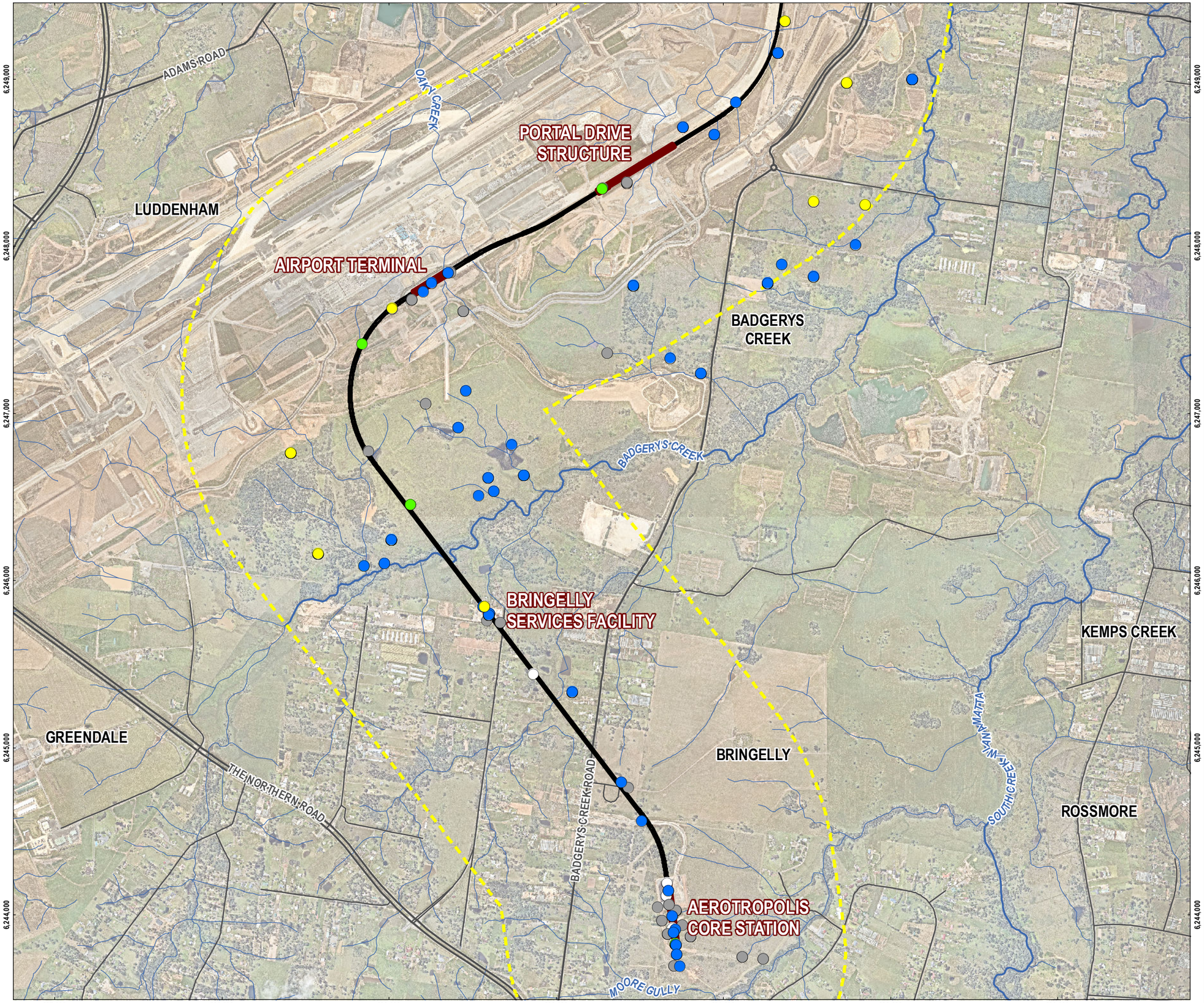

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Zinc Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 8µg/L to <100µg/L
- <8µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 8B

Groundwater Zinc Concentration Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F008B_GIS_REVD**

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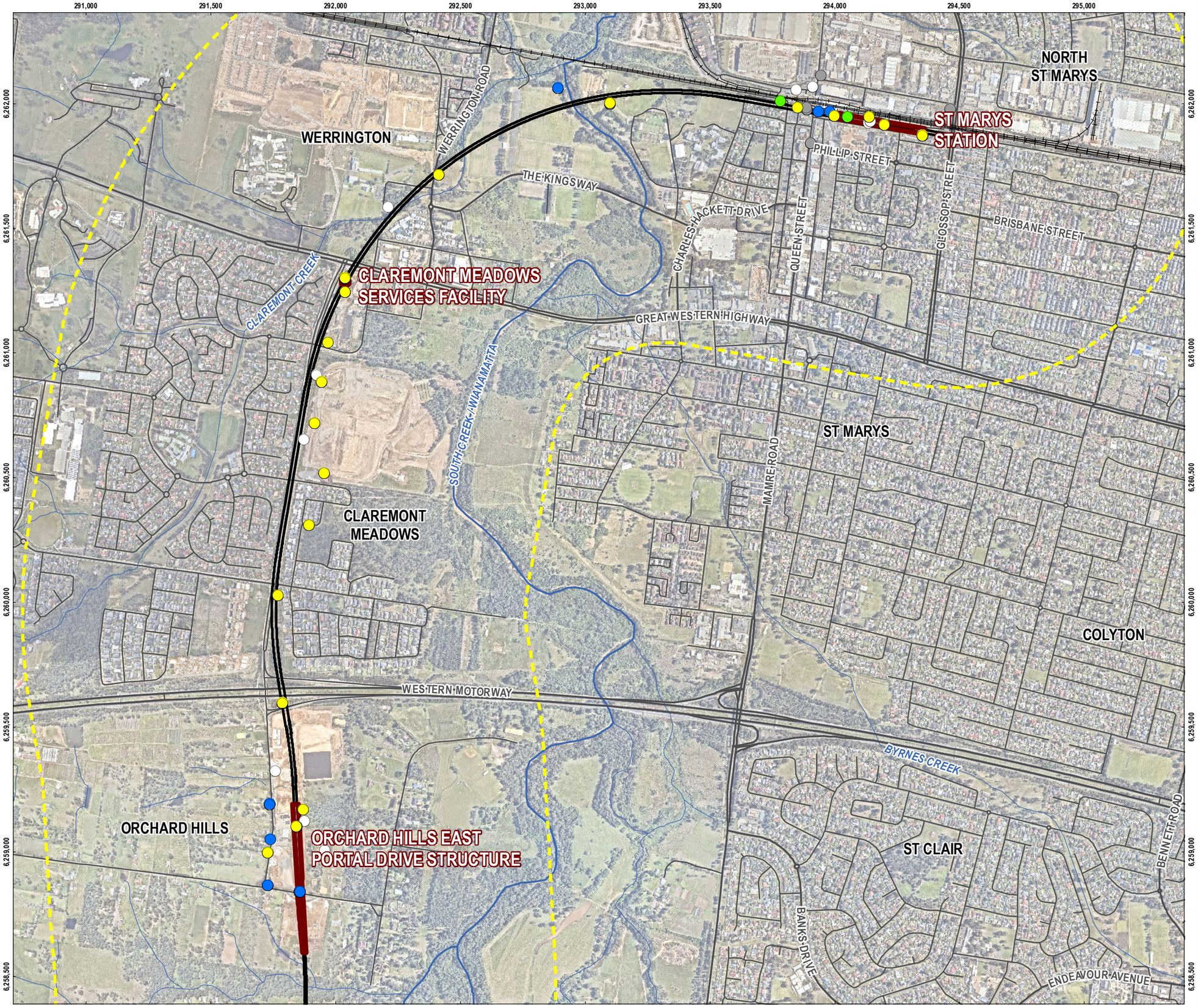

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Ammonia (as N) Concentration

- >10,000µg/L
- 1,000µg/L to 10,000µg/L
- 100µg/L to <1,000µg/L
- <100µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 9A

Groundwater Ammonia (as N) Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F009A_GIS_REVD**

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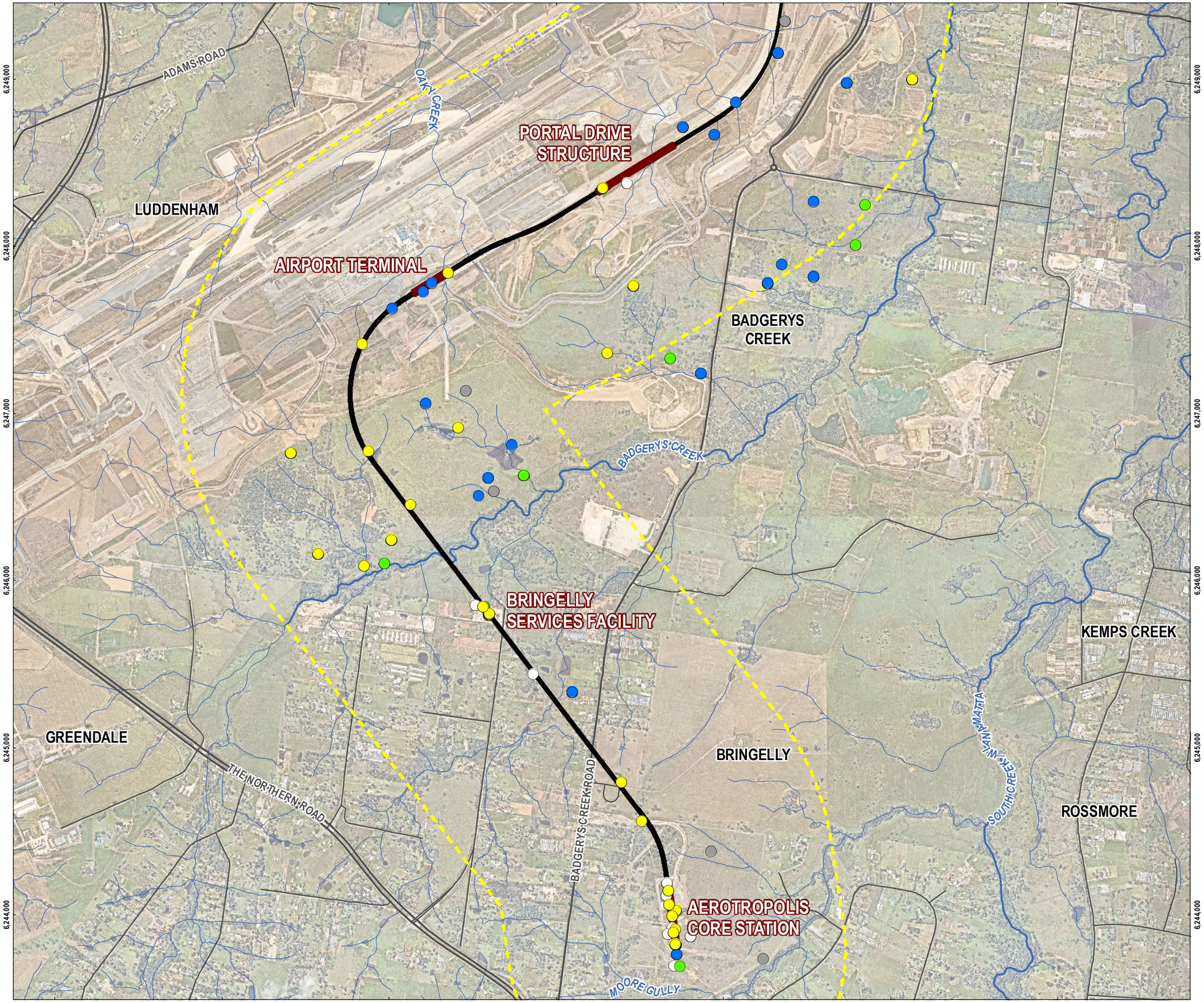

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Ammonia (as N) Concentration

- >10,000µg/L
- 1,000µg/L to 10,000µg/L
- 100µg/L to <1,000µg/L
- <100µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

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WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 9B

Groundwater Ammonia (as N) Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F009B_GIS_REVD**

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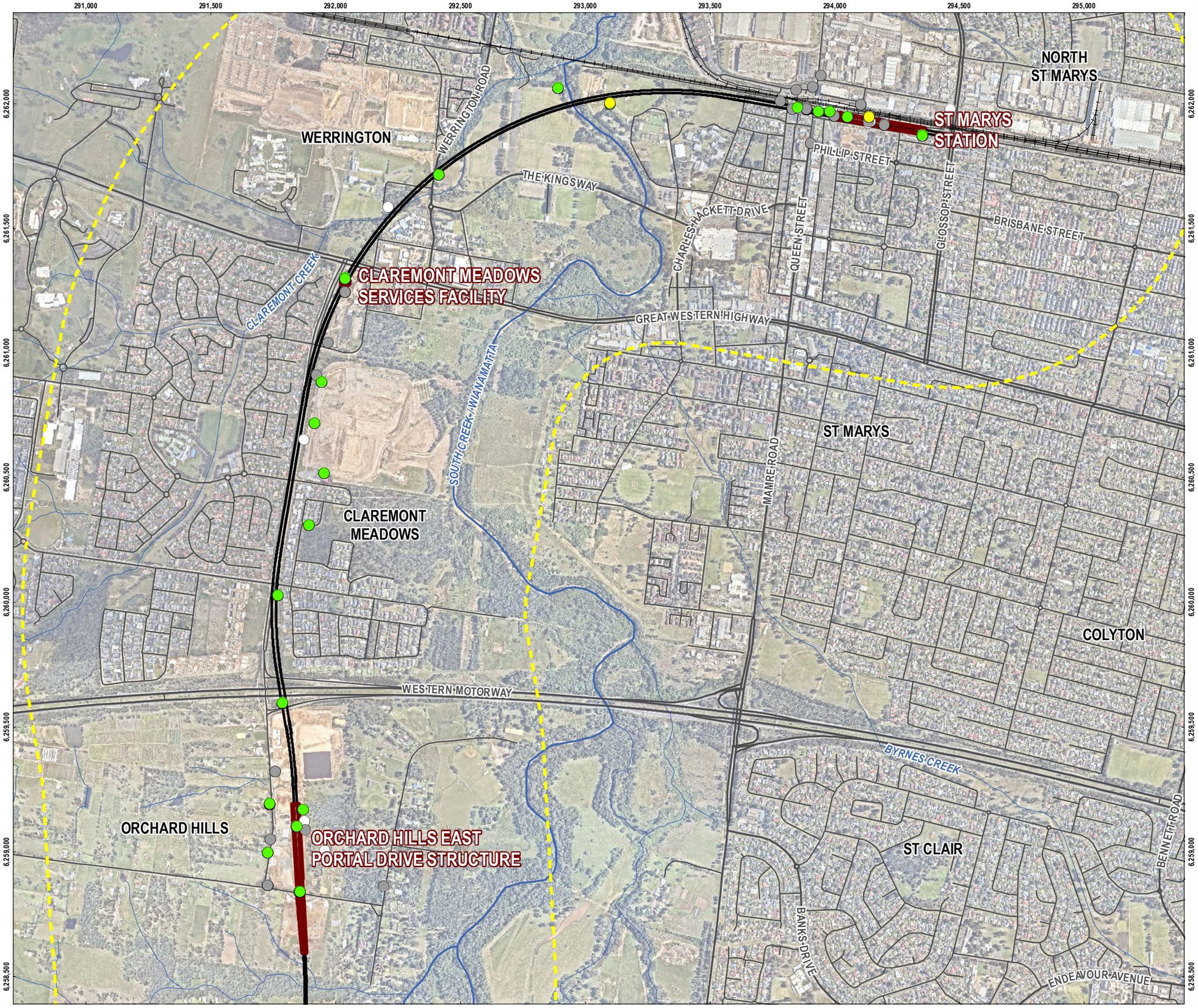

LEGEND

Maximum Nitrate (as NO3-N) Concentration

- >10,000µg/L
- 1,000µg/L to 10,000µg/L
- 500µg/L to <1,000µg/L
- <500µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 10A

Groundwater Nitrate (as NO3-N) Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

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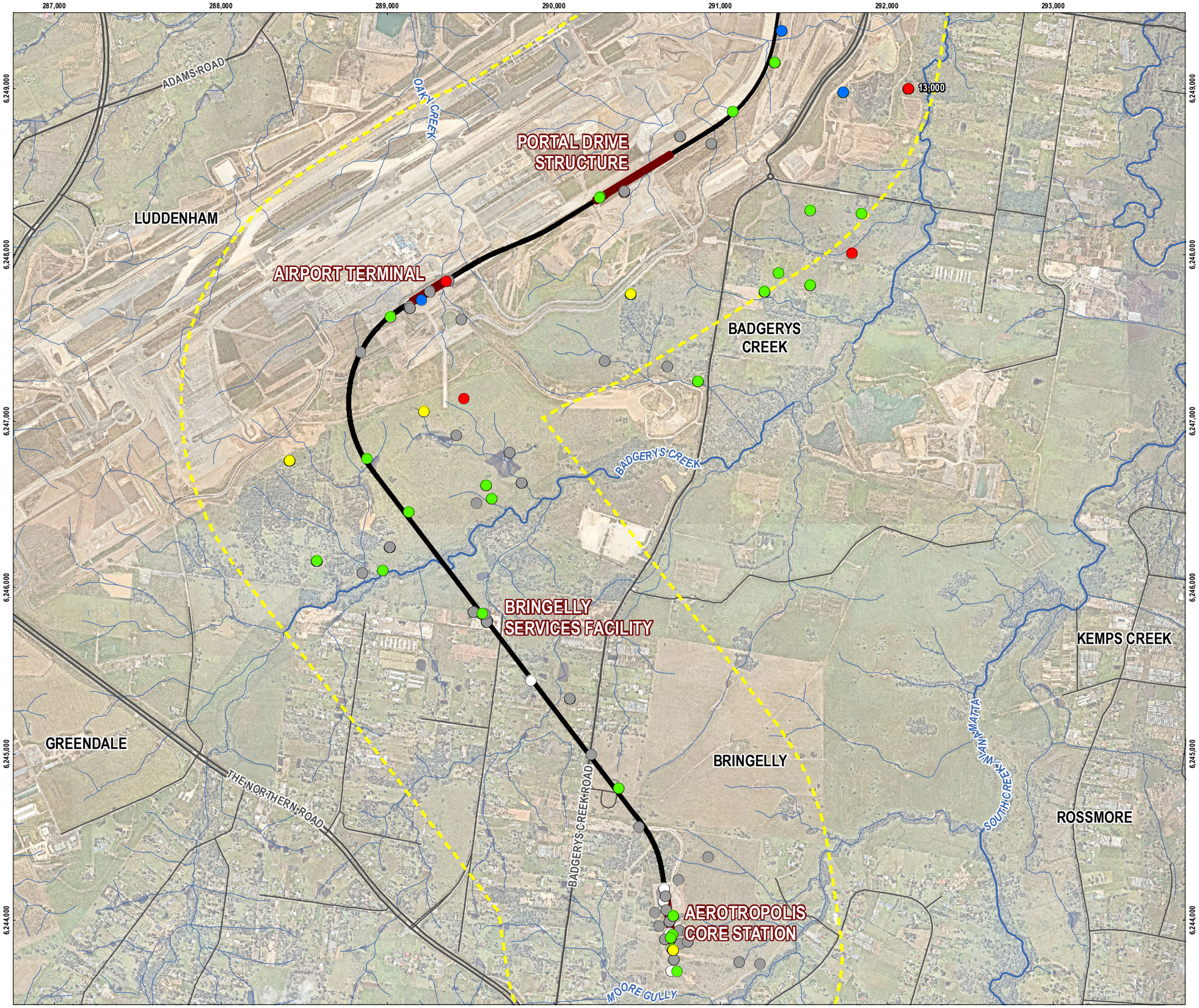

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Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Nitrate (as NO3-N) Concentration

- >10,000µg/L
- 1,000µg/L to 10,000µg/L
- 500µg/L to <1,000µg/L
- <500µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 10B

Groundwater Nitrate (as NO3-N) Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F010B_GIS_REVD**

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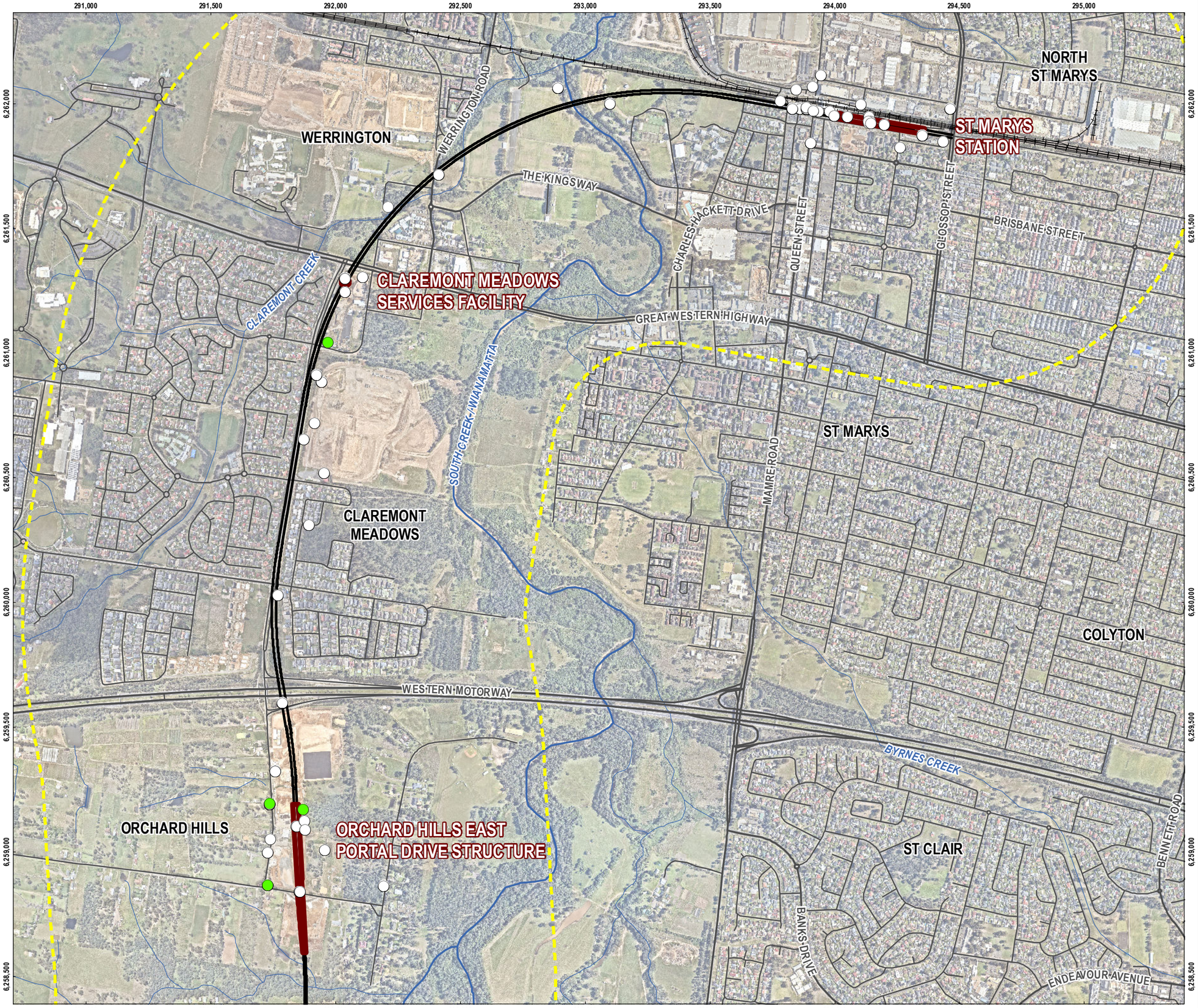

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Phosphate Total (P) Concentration

- >10,000µg/L
- 1,000µg/L to 10,000µg/L
- 100µg/L to <1,000µg/L
- <100µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE 1:15,000
PAGE SIZE: A3
PROJECTION: GDA2020 MGA Zone 56

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WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 11A

Groundwater Phosphate Total (P) Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: 18.05.23 PROJECT: 754-SYDGE292575 FILE: 292575_HIR_F011A_GIS_REVD

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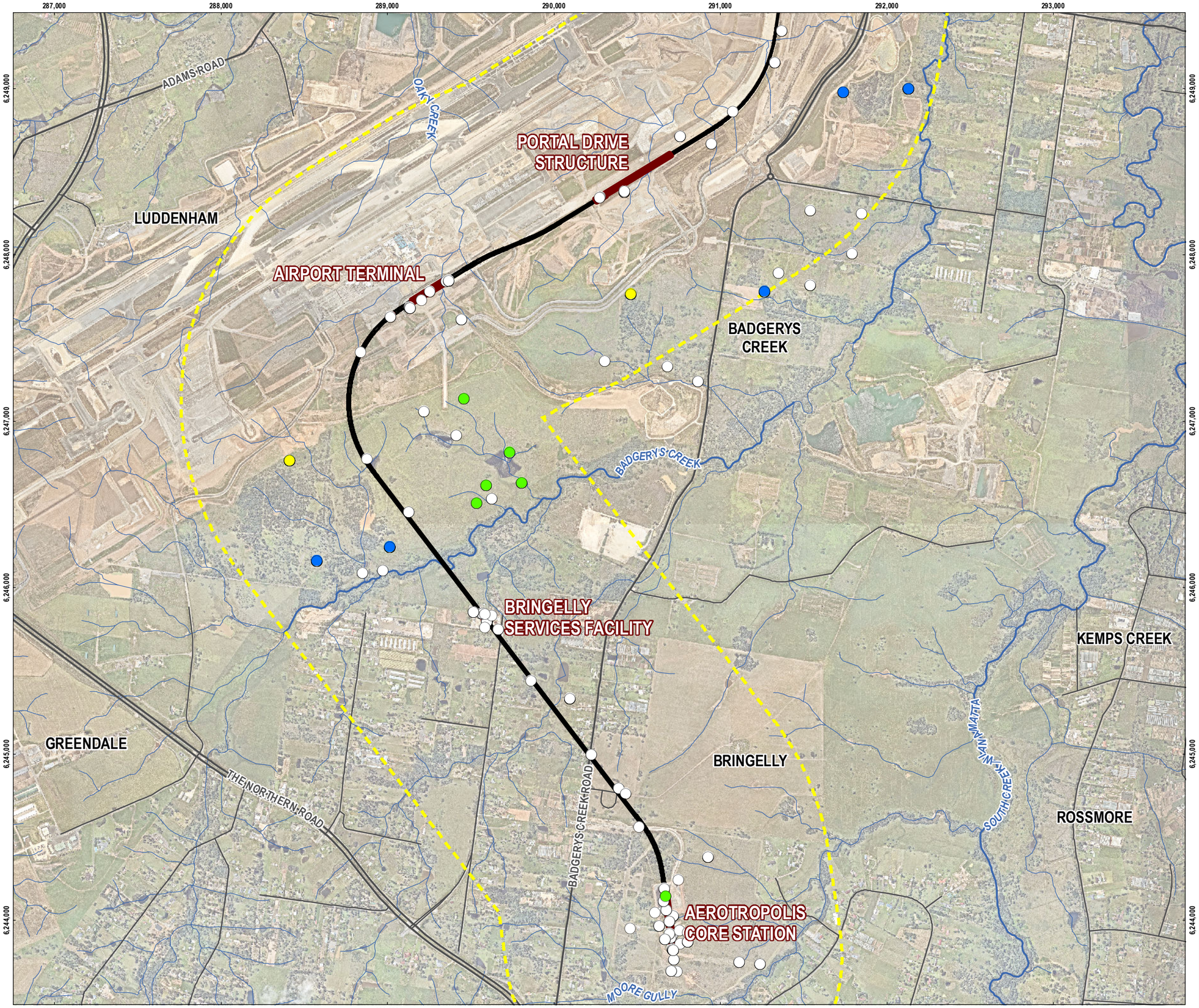

LEGEND

Maximum Phosphate Total (P) Concentration

- >10,000µg/L
- 1,000µg/L to 10,000µg/L
- 100µg/L to <1,000µg/L
- <100µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 11B

Groundwater Phosphate Total (P) Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F011B_GIS_REVD**

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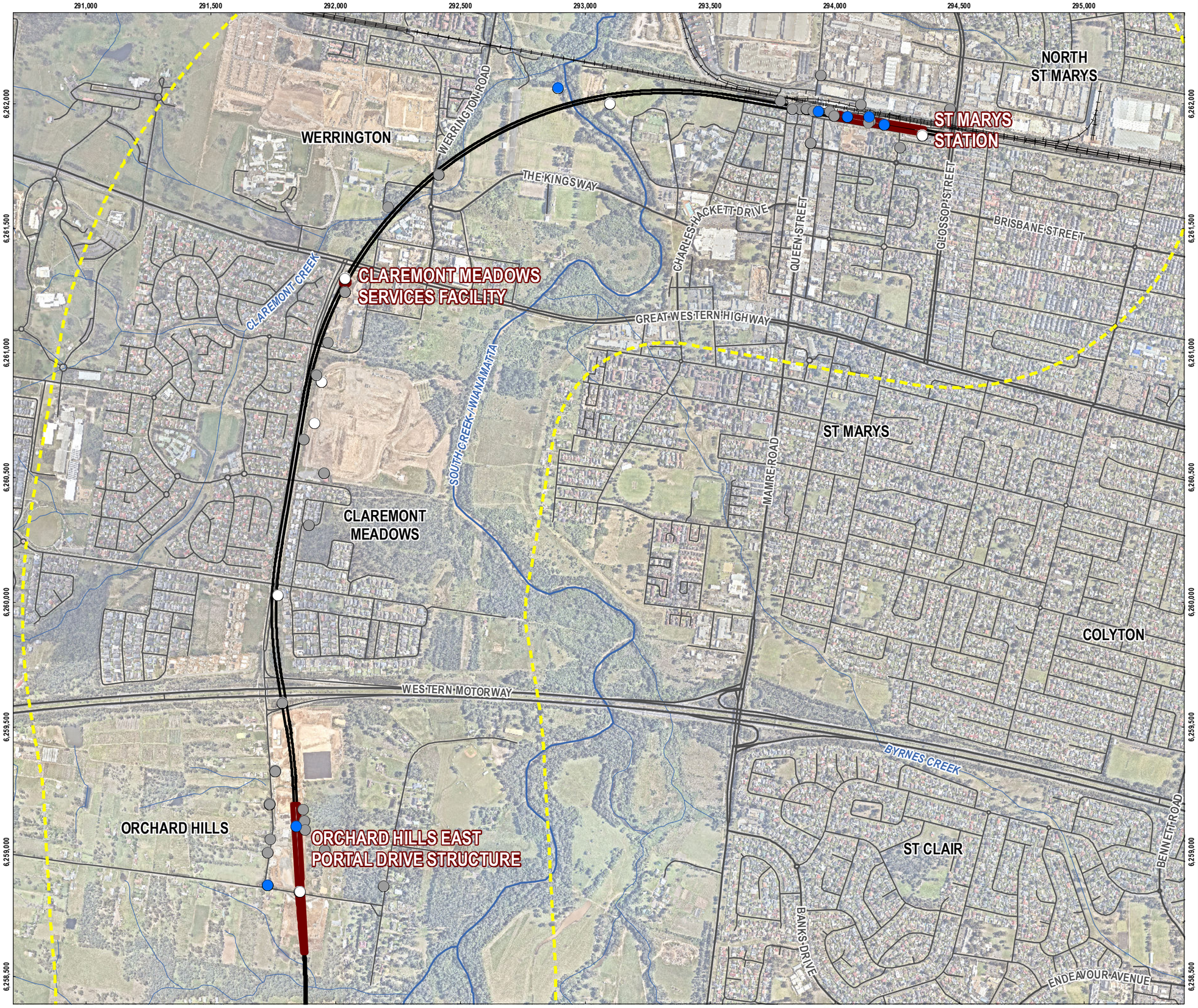

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Sum of PFHxS + PFOS Concentration

- >2µg/L
- 0.13µg/L to 2µg/L
- 0.00023µg/L to <0.13µg/L
- <0.00023µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

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WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 12A

Groundwater Sum of PFHxS + PFOS Concentration

Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F012A_GIS_REVD**

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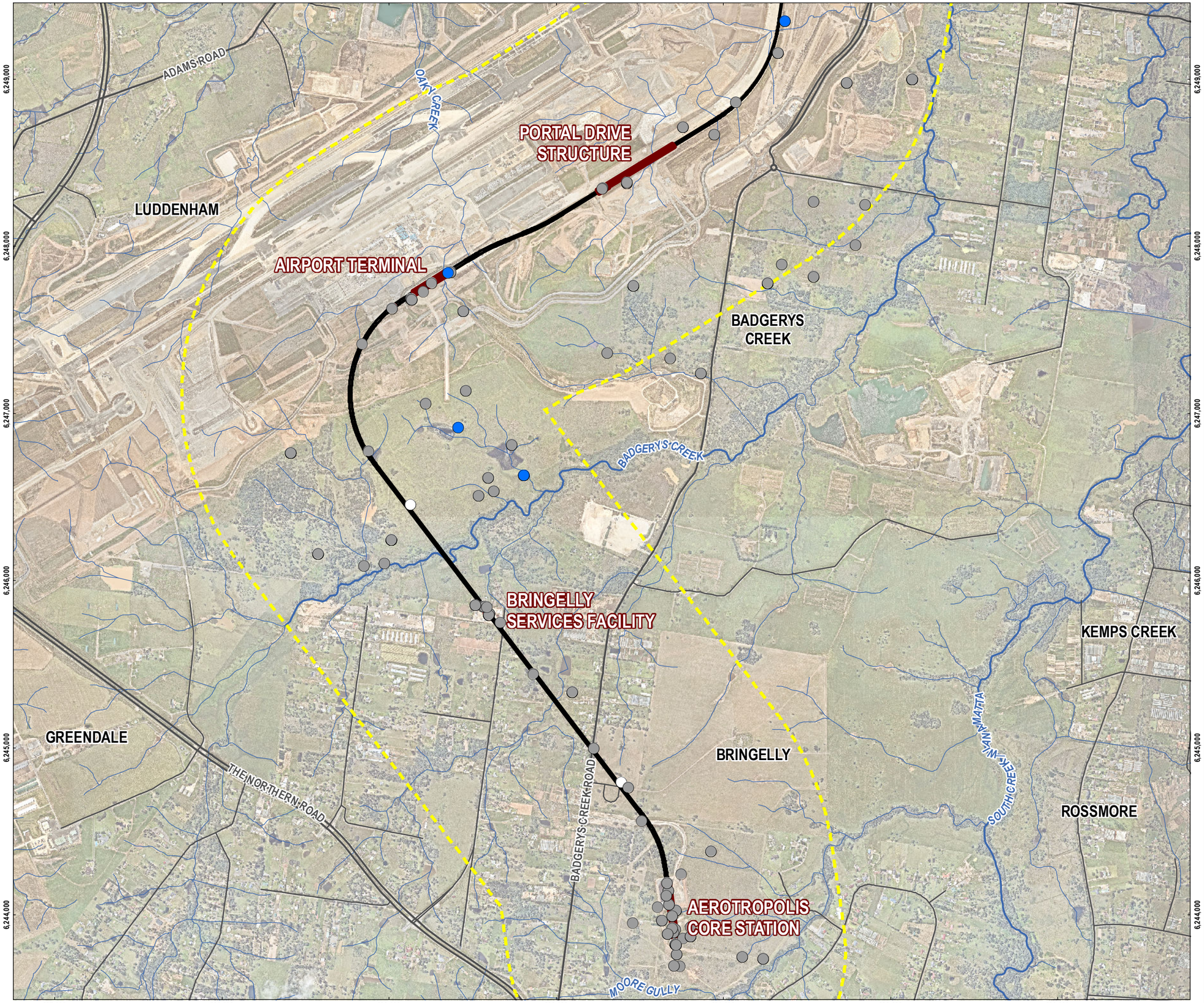

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum Sum of PFHxS + PFOS Concentration

- >2µg/L
- 0.13µg/L to 2µg/L
- 0.00023µg/L to <0.13µg/L
- <0.00023µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

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WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 12B

Groundwater Sum of PFHxS + PFOS Concentration

Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F012B_GIS_REVD**

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LEGEND

Maximum TPH C6-C9 Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 10µg/L to <100µg/L
- <10µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

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WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 13A

Groundwater TPH C6-C9 Concentration

Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F013A_GIS_REVD**

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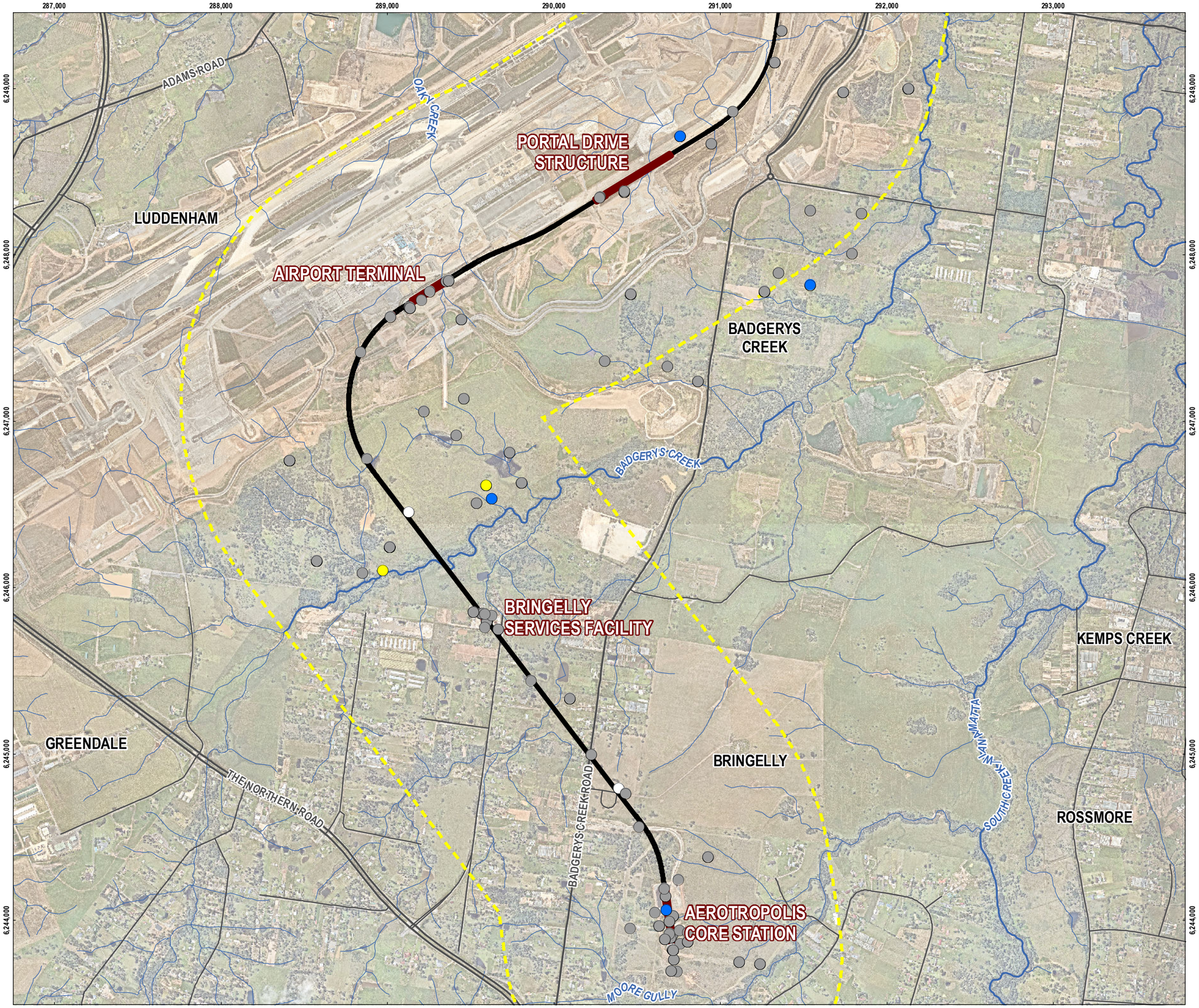

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum TPH C6-C9 Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 10µg/L to <100µg/L
- <10µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

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WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 13B

Groundwater TPH C6-C9 Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F013B_GIS_REVD**

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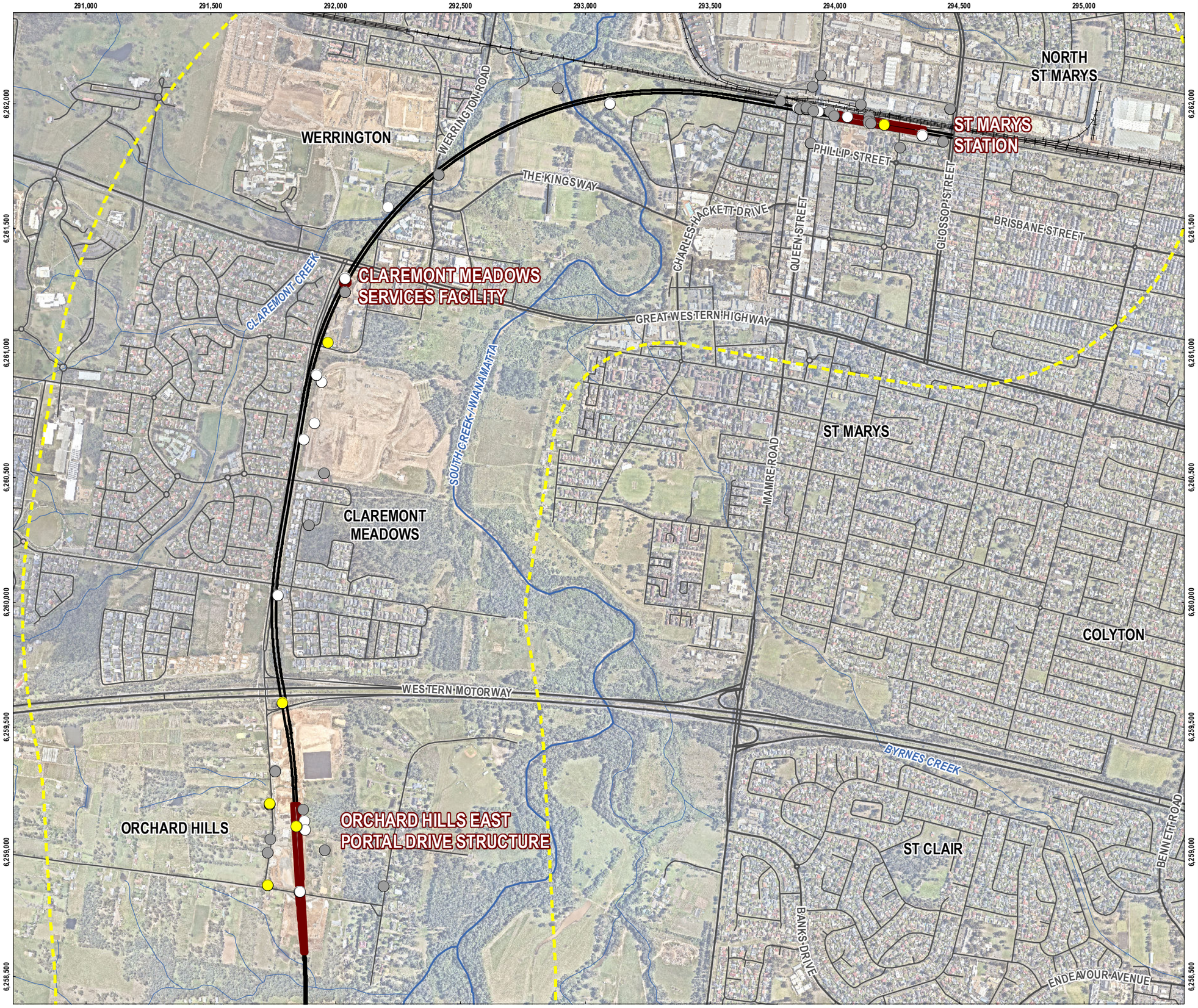

LEGEND

Maximum TPH C10-C36 Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 10µg/L to <100µg/L
- <10µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Railway
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey. Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

0 250 500 m

SCALE **1:15,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

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WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 14A

Groundwater TPH C10-C36 Concentration

Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F014A_GIS_REVD**

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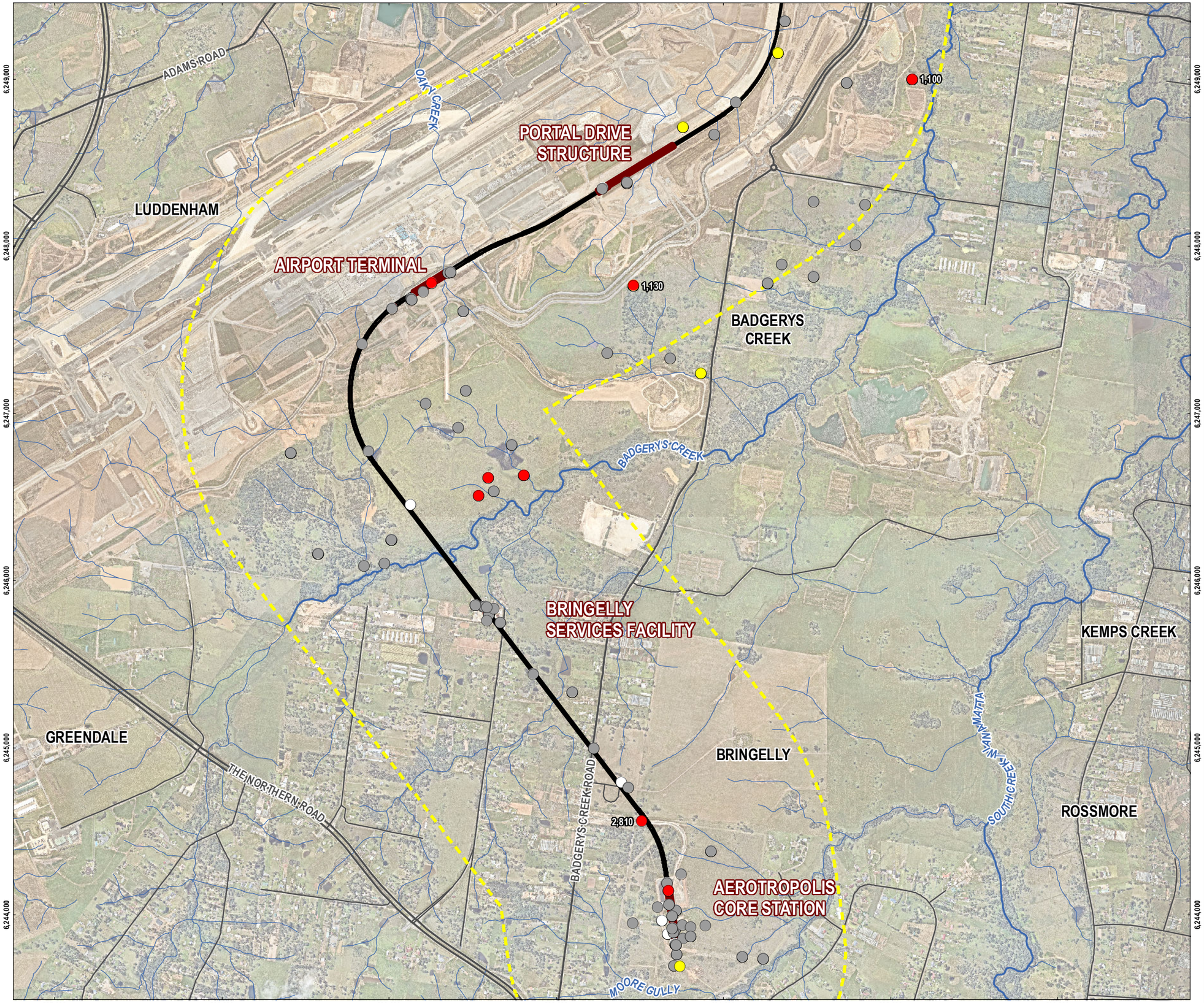

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Maximum TPH C10-C36 Concentration

- >1,000µg/L
- 100µg/L to 1,000µg/L
- 10µg/L to <100µg/L
- <10µg/L
- <LOR
- No Data
- Project Alignment
- Project Alignment - Structure
- Major Road
- Minor Road
- Perennial Watercourse
- Non-perennial Watercourse
- Project Alignment Buffer (1 km)

SOURCE
Analytics results and locations compiled by Tetra Tech Coffey.
Maximum concentration shown where multiple results are available.
Alignment buffer from Tetra Tech Coffey.
Alignment supplied by CPBG.
Roads and watercourses from DFSI.
Aerial imagery from Nearmap (capture date November, 2022).

N

0 250 500 m

SCALE **1:22,500**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 14B

Groundwater TPH C10-C36 Concentration
Hydrogeological Interpretive Report

TETRA TECH COFFEY

DATE: **18.05.23** PROJECT: **754-SYDGE292575** FILE: **292575_HIR_F014B_GIS_REVD**

DISCLAIMER: THIS FIGURE HAS BEEN PRODUCED FOR INTERNAL REVIEW ONLY AND MAY CONTAIN INCONSISTENCIES OR OMISSIONS. IT IS NOT INTENDED FOR PUBLICATION.

SAVED BY: TAUHIDUL.ISLAM 18.05.23 6:31:31 PM
DOC REFERENCE: \\TTT.LOCAL\COFFS\72\SIGIS\286919_SYDGE_CPBG_WSASBT\CPBG_WSASBT_GIS\MXD\SYDGE292575_HIR\REVD\292575_HIR_GIS038_REVD.MXD_2

Annexure B Groundwater Monitoring Bore Logs

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-BH-3006W*
principal:	*Sydney Metro*	sheet:	1 of 6
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Airport Terminal*	date started:	*27 Jun 2022*
		date completed:	*29 Jun 2022*
		logged by:	*FL*
		checked by:	*VN*

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T; HW casing		Not Observed		84				**FILL: Gravelly CLAY**: low to medium plasticity, grey, with fine to medium grained, angular to sub-angular gravel.	<Wp			**FILL** PID: 2.8 ppm; PID: 1.8 ppm
			SPT 5, 12, 14 N*=26	83	1.0			**FILL: CLAY**: high plasticity, orange to brown mottled grey.	=Wp			PID: 1.8 ppm
								FILL: Gravelly SAND: fine to medium grained, grey, fine to medium grained, sub-angular gravel.	D			PID: 1.6 ppm; PID: 1.5 ppm
			SPT 6, 14, 16 N*=30	82	2.0							
							CH	**CLAY**: high plasticity, orange to brown mottled grey.	=Wp	VSt		**RESIDUAL SOIL** PID: 1.3 ppm
			SPT 6, 14, 15 N*=29	81	3.0							
			SPT 8, 11, 18 N*=29	80	4.0							PID: 1.4 ppm
									<Wp			
			SPT 4, 9, 15 N*=24	79	5.0			5.0 to 5.05 m: with high weathered shale gravel, red to brown, angular				PID: 1.4 ppm
			SPT 7, 16, 15 N*=31	78	6.0							PID: 1.4 ppm
			SPT 10, 22, 30 N*=52	77	7.0					H		PID: 1.7 ppm

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	2 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T; HW casing		Not Observed	SPT 7, 15, 26 N*=41	76			CH	**CLAY**: high plasticity, orange to brown mottled grey. *(continued)*	<Wp	H		**RESIDUAL SOIL** PID: 1.7 ppm
			SPT 9, 10, 18 N*=28	75	9.0		CH	**CLAY**: high plasticity, orange to brown to red to brown mottled pale grey, trace of fine grained, sub-angular ironstone gravel and rootlets. Probable residual soil.	=Wp	Fb		PID: 1.8 ppm
			B									HP 350 kPa HP 310 kPa HP 350 kPa
			SPT 7, 10, 15 N*=25	74	10.0							PID: 1.8 ppm
			B				CL	**CLAY**: medium plasticity, red to brown mottled pale brown.	=Wp	VSt		PID: 3.9 ppm
			SPT 3, 7, 14 N*=21	73	11.0							PID: 3 ppm HP 240 kPa HP 250 kPa HP 250 kPa
			SPT 5, 10, 13 N*=23	72	12.0		CH	**CLAY**: high plasticity, orange to brown mottled pale grey.	=Wp			PID: 1.7 ppm HP 400 kPa HP 400 kPa HP >600 kPa
N			SPT 12, 25, 30 N*=55	71	13.0				<Wp	Fb		HP >600 kPa HP >600 kPa HP >600 kPa PID: 3 ppm HP >500 kPa
				70	14.0			Borehole SBT-BH-3006W continued as cored hole				
				69	15.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	3 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		76									
			9.0								
		75									
			10.0								
		74									
			11.0								
		73									
			12.0								
		72									
			13.0								
		71			started coring at 13.48m						
HQ	Not Observed				**CLAY**: high plasticity, pale grey to orange to brown, trace of fine to medium grained, sub-angular to subrounded ironstone gravel.	RS		B	0%		
			14.0		**SILTSTONE**: grey to red to brown, distinctly laminated with 5-10%. With fine grained sandstone laminations.	MW - HW		d=0.01 a=0.10	99%		SM, 0°, Clay, 2 mm
		70			**SANDSTONE**: fine grained, pale grey to brown, with 10% siltstone laminations, distinctly laminated.			d=0.02 a=0.10			6x PT, 0 - 5°, PL, SO, CN, 1-5mm
			15.0		**SILTSTONE**: dark grey with orange to brown bands, distinctly laminated. 15.52 to 15.53 m: mudstone clasts, fine to medium grained	MW		d=0.03 a=0.16	95%		0°, PL, 1 mm, carbonaceous lamination 0°, PL, 1 mm, carbonaceous lamination JT, 45°, PL, SL, CN CS, 10°, PL, 10 mm
		69									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	4 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	68		15.88 to 16.00 m: sandstone bed, 180mm thick; with siltstone laminations	MW					JT, 45°, PL, SL, CN
				SILTSTONE: grey and dark grey, indistinctly laminated.			d=0.11 a=0.07	100%		
				16.64 to 16.66 m: mudstone clasts, 10mm diameter						JT, 50 - 95°, UN, Fe SN
			17.0							SM, 0°, Fe Clay, 10 mm
		67						91%		JT, 30°, PL, SO, CN
										SM, 0°, Clay, 300 mm
			18.0	**INTERBEDDED SILTSTONE (60%), SANDSTONE (40%)**: dark grey, sandstone is fine grained, grey, pale grey, indistinctly laminated.	SW		d=0.06 a=0.14			
		66					d=0.13 a=0.21			
			19.0				d=0.09 a=0.13	94%		
		65		**SILTSTONE**: dark grey, with 5-10% sandstone laminations.	HW					JT, 60°, PL, SO, CN
			20.0							
		64			MW - SW		d=0.01 a=0.09	100%		
			21.0	21.00 to 21.35 m: mudstone clasts, subangular to subrounded, up to 20mm (5%)						
		63		21.35 to 21.45 m: with sandstone laminations, up to 50mm thick, 0-20°						JT, 20°, PL, SO, CN
				NO CORE: 0.06 m	MW - SW		d=0.08 a=0.15			JT, 20°, PL, SL, CN
			22.0	**SILTSTONE**: dark grey, indistinctly laminated, 0°.			d=0.04 a=0.11			carbonaceous flecks; JT, 30°, PL, SL, CN; carbonaceous flecks
		62		**NO CORE:** 0.00 m	MW - SW			92%		SZ, 0°, 30 mm
				SILTSTONE: dark grey, indistinctly laminated, 0°.						
			23.0	22.81 to 22.84 m: sandstone band: fine grained, grey						
		61		**SILTSTONE**: dark grey, indistinctly laminated, 0-5°, with sandstone laminations, up to 20mm. becoming grey becoming dark grey						SM, 0 - 10°, Clay CN, 15 mm
										JT, 45°, PL, SO, CN; JT, 45°, PL, SO, CN; SM, 10 - 45°, Clay, 20-50mm

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	5 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	60		**SILTSTONE**: dark grey, indistinctly laminated, 0-5°, with sandstone laminations, up to 20mm. *(continued)* 24.35 to 24.40 m: mudstone clasts, angular, up to 20mm (40°)	MW - SW		d=0.03 a=0.35	21%		JT, 20°, PL, SO, CN; JT, 30°, PL, SO, CN
		59	25.0	25.57 to 25.62 m: laminated at 30°			d=0.06 a=0.05 d=2.58 a=3.32	21%		PT, 5°, PL, SO, CN; JT, 10°, PL, SO, CN; JT, 40°, PL, SO, VN; SM, Clay, 10 mm; PT, 5°, PL, SL, CN; PT, 5°, PL, SL, CN; PT, 15°, PL, SL, CN; PT, 5°, PL, SL, CN; SM, Clay, 30 mm; JT, 90°, UN, SO, CN, 50 mm; JT, 45°, PL, SL, VN; SM, Clay, 20 mm, at below; JT, 90°, closed; XL Rock; SM, 0 - 45°, Clay, 40 mm; SM, Clay, 110 mm
		58	26.0	**NO CORE:** 1.10 m						
		57	27.0	**SILTSTONE**: dark grey, indistinctly laminated 0-10°. **SANDSTONE**: fine grained, grey, distinctly laminated with dark grey siltstone, up to 2 mm thick 0-15°. **SILTSTONE**: dark grey to grey, indistinctly laminated.	MW - SW		d=0.01 a=0.14	48%		calcrete flecks up to 2mm thick; SM, Clay, 20 mm; 18x JT, 20 - 30°, PL, SL, VN; JT, 50°, PL, SL, VN
		56	28.0							SM, 0°, Clay, 100 mm; JT, 30°, PL, SL, CO; SM, 0°, Clay, 50 mm; JT, 45°, PL, SL, CN
		55	29.0	28.87 to 28.89 m: mudstone clasts, grey, up to 20mm	SW - FR		d=0.32 a=0.96; d=0.05 a=0.35	78%		SM, 0°, Clay, 70 mm; SM, Clay, 10 mm; JT, 20°, PL, SL, VN, 10 mm; JT, 20°, PL, SL, VN; CS, 0°
		54	30.0	**INTERLAMINATED SANDSTONE (60%), SILTSTONE (40%)**: fine grained, grey to pale grey, siltstone is dark grey, distinctly laminated at 0-10°.			d=0.27 a=0.35	66%		
		53	31.0	**SILTSTONE**: grey, dark grey, with 10% sandstone laminations, distinctly laminated at 0-10°.			d=0.19 a=0.19			JT, 40°, UN, SO, VN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-3006W.GPJ <<DrawingFile>> 25/11/2022 14:54

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	6 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	52			**SILTSTONE**: grey, dark grey, with 10% sandstone laminations, distinctly laminated at 0-10°. *(continued)*	SW - FR		d=0.06 a=0.30	66%		JT, 20°, PL, SL, VN SM, Clay, 20 mm SM, 5°, CA, 10 mm SM, 30°, CA, 5 mm SM, 30°, CA, 5 mm JT, 45°, PL, SL, CN JT, 30°, PL, SL, CN JT, 30°, PL, SL, CN JT, 30°, PL, SL, CN CS, 30 mm SM, Clay, 60 mm JT, 30°, PL, SL, VN JT, 70°, PL, SL, CN
		51	33.0		33.05 to 33.18 m: mudstone clasts, up to 20mm thick			d=0.23 a=0.35			
		50	34.0		**SANDSTONE**: fine grained, grey, distinctly laminated with dark grey siltstone, up to 10 mm. **SILTSTONE**: dark grey.			a=0.27	88%		SM, 20°, Clay JT, 20°, PL, SL, CN
		49	35.0					a=0.05	100%		
		48	36.0		Borehole SBT-BH-3006W terminated at 36.10 m Target depth						
		47	37.0					d=0.09 a=0.32			
		46	38.0								
		45	39.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-3006W.GPJ <<DrawingFile>> 25/11/2022 14:54

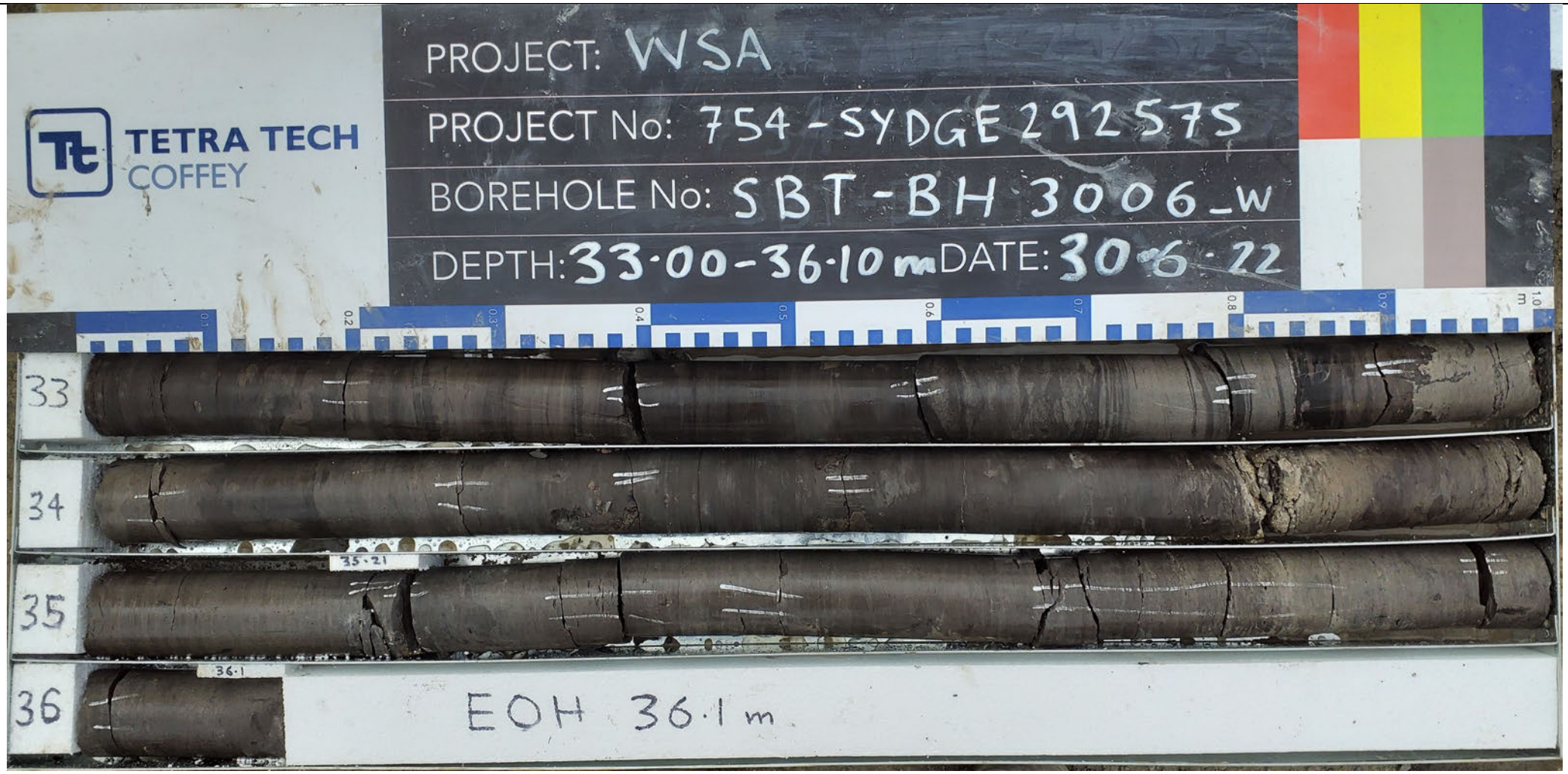
drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-GW-3006W**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-GW-3006W**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-GW-3006W**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-GW-3006W
original	A4		project no: 754-SYDGE292575	Figure 4

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-GW-3006W
original	A4		project no: 754-SYDGE292575	Figure 5



drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-GW-3006W
original	A4		project no: 754-SYDGE292575	Figure 6

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	1 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, C		Not Observed	DS + E				CH-MH	**TOPSOIL: Silty CLAY**: low plasticity, dark brown, trace of roots.	>Wp	VSt		**TOPSOIL**
								Silty CLAY: high plasticity, red-brown, trace fine sand and root fibres. 0.3 m: becoming brown				**RESIDUAL SOIL** PID: 11.9 ppm
								0.8 m: becoming brown mottled grey				
			E		1.0							PID: 19.1 ppm
			SPT 4, 9, 13 N*=22				CH	**CLAY**: high plasticity, pale brown, mottled pale grey.	<Wp			
			E		2.0							PID: 10.9 ppm
			SPT 5, 5, 4/30mm N*=R							H		
					3.0			Borehole SBT-BH-4008 continued as cored hole				
					4.0							
					5.0							
					6.0							
					7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	2 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
1.0						
2.0	started coring at 2.65m					
3.0	**Silty CLAY**: high plasticity, grey mottled orange, trace fine gravels, (extremely weathered siltstone).	RS				
	SILTSTONE: dark grey, red-brown, distinctly bedded at 0-5°, wtih 5% occasional sandstone laminations.	HW		88%		JT, 60°, CU, RO, Fe SN - Clay CO; JT, 60°, PL, RO, Fe SN; SM, Clay, 30 mm; SM, Clay, 80 mm; SM, Clay, 120 mm; SM, Clay, 50 mm
4.0	4.00 to 6.00 m: becoming dark grey, brown		d=0.14 a=0.13	76%		PT, 0°, PL, RO, Clay CO; SM, Clay, 20 mm
5.0						SM, Clay, 50 mm; PT, 0°, PL, RO, Fe SN; SM, Clay, 90 mm
			d=0.01 a=0.02			SM, Clay, 40 mm; JT, 45°, PL, RO, Clay CO
6.0		MW				PT, 10°, PL, RO, CN
			d=0.05 a=0.07	94%		PT, 0°, PL, RO, Fe SN; PT, 0°, PL, RO, X CO; SM, Clay, 30 mm; PT, 0°, PL, RO, Fe SN; PT, 15°, PL, RO, Fe SN
7.0		SW - FR	d=0.10 a=0.11			

Defects are: PT, 0 - 15°, PL, RO, Clay CO, unless otherwise described

HQ — Not Observed

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	3 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular	general
	INTERLAMINATED SANDSTONE (60%) AND SILTSTONE (40%): sandstone is fine grained and pale grey, siltstone is dark grey, distinctly laminated at 0-10° with occasional siderite nodules. *(continued)* 8.44 to 8.64 m: band of siltstone, dark grey	SW - FR		d=0.20 a=0.59	94%			
9.0	**SILTSTONE**: dark grey, distinctly bedded at 0-5°, with occassional siderite nodules and carbonaceous veins and clay seams.						SM, Clay, 50 mm	
10.0				d=0.29 a=0.20 d=0.34 a=0.22				
					91%		PT, 10°, PL, RO, X CO	
							JT, 60°, PL, RO, CN	
11.0	11.05 to 11.55 m: becoming pale grey	HW					SM, Clay, 40 mm	
	11.33 to 11.53 m: clay band, due to vertical joint, high plasticity, pale grey						JT, 55°, PL, RO, Clay CO	
							SM, Clay, 70 mm	
		SW - FR					JT, 45°, CU, RO, CN	
12.0				d=0.14 a=0.20 d=0.08 a=0.15				
							JT, 50°, PL, RO, CN	
13.0							SM, Clay, 40 mm	
							JT, 30°, CU, RO, Clay CO	
	13.58 to 13.75 m: with 10% fine grained sandstone lamination	FR			96%		JT, 25°, PL, RO, CN	
14.0	**INTERLAMINATED SANDSTONE (75%) AND SILTSTONE (25%)**: sandstone is fine grained and pale grey, siltstone is dark grey, distinctly cross-laminated at 0-10°.			d=1.84 a=0.76			JT, 80°, PL, RO, CN	
	SANDSTONE: fine to medium grained, pale grey, with 5-10% dark grey siltstone laminations.							
15.0				d=4.47 a=3.97				
				d=0.71 a=1.20	100%		PT, 10°, PL, RO, CN	

Defects are: PT, 0 - 15°, PL, RO, Clay CO, unless otherwise described

drilling method: HQ; water: Not Observed

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	4 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular	general
HQ	Not Observed				**SANDSTONE**: fine to medium grained, pale grey, with 5-10% dark grey siltstone laminations. *(continued)* 16.04 to 16.24 m: band of dark grey siltstone, with siderite nodules	FR		d=0.63 a=1.70				Defects are: PT, 0 - 15°, PL, RO, Clay CO, unless otherwise described
			17.0					d=0.49 a=0.87	100%		PT, 15°, PL, RO, X SN	
					17.24 to 17.30 m: with 30% carbonaceous laminations						JT, 75 - 90°, CU, tight	
					From 17.60 m: becoming pale brown						JT, 35°, PL, RO, CA SN	
			18.0								JT, 60°, PL, RO, CA SN	
					From 18.35 m: becoming pale grey 18.47 to 22.11 m: 20% carbonaceous laminations						JT, 60°, UN, tight	
											PT, 0°, PL, RO, X SN	
											PT, 5°, PL, RO, X SN	
			19.0					d=0.76 a=0.90				
			20.0					d=2.30 a=2.06	100%		PT, 10°, PL, RO, CN	
			21.0					d=2.28 a=2.59			PT, 0°, PL, RO, X CO	
			22.0					d=0.08 a=1.13			PT, 0°, PL, RO, X SN	
											PT, 0°, PL, RO, X SN	
											PT, 0°, PL, RO, X SN	
								d=1.75 a=2.24	100%			
			23.0								PT, 10°, PL, RO, X SN	
					INTERBEDDED SANDSTONE (50%) AND SILTSTONE (50%): sandstone is fine grained and pale grey, siltstone is dark grey, distinctly laminated.			d=0.43			PT, 10°, PL, RO, X SN	

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	5 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

depth (m)	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular	general
	SILTSTONE: dark grey, pale brown, indistinctly laminated, with occassional siderite nodules and 10% fine grained sandstone. *(continued)* 24.00 to 24.12 m: with fine grained sandsotne (20%) laminations 24.76 to 24.82 m: fine grained sandstone band	FR		a=1.06	100%			
25.0				d=0.09 a=0.43			JT, 45°, PL, RO, CN	
26.0	**INTERLAMINATED SILTSTONE (60%) AND SANDSTONE (40%)**: siltstone is dark grey, sandstone is fine grained and pale grey, indistinctly laminated at 0-10°. 26.40 to 26.62 m: band of fine grained sandstone			d=0.59 a=0.53	100%			
27.0	**SILTSTONE**: dark grey, indistinctly bedded at 0-5°, with 10% fine grained sandstone laminations. 26.90 to 27.02 m: band of interlaminated siltstone (50%) and sandstone (50%)			d=0.70 a=0.59				
28.0				d=0.07 a=0.64			PT, 0°, PL, RO, CN	
29.0				d=0.15 a=0.18	100%			
				d=0.27 a=0.63			JT, 20°, PL, RO, CN	
30.0	**INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%)**: sandstone is fine grained and pale grey, siltstone is dark grey, distinctly laminated at 0-10°.							
31.0	**SILTSTONE**: dark grey, grey, indistinctly bedded at 0-15°, with 10% fine grained sandstone laminations.			d=0.63 a=1.47	100%		PT, 0°, PL, RO, CA CO PT, 0°, PL, RO, CA CO	

method: HQ | water: Not Observed

Defects are: PT, 0 - 15°, PL, RO, Clay CO, unless otherwise described

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	6 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					**INTERLAMINATED SANDSTONE (70%), SILTSTONE (30%)**: fine grained, grey, siltstone is dark grey, distinctly laminated at 0-10°. *(continued)*	FR		d=0.92 a=1.56	100%		
					Borehole SBT-BH-4008 terminated at 32.19 m						
			33.0								
			34.0								
			35.0								
			36.0								
			37.0								
			38.0								
			39.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	*SBT-BH-4008*
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	*28 Oct 2022*
		date completed:	*02 Nov 2022*
		logged by:	*DS/PD*
		checked by:	*VN*

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

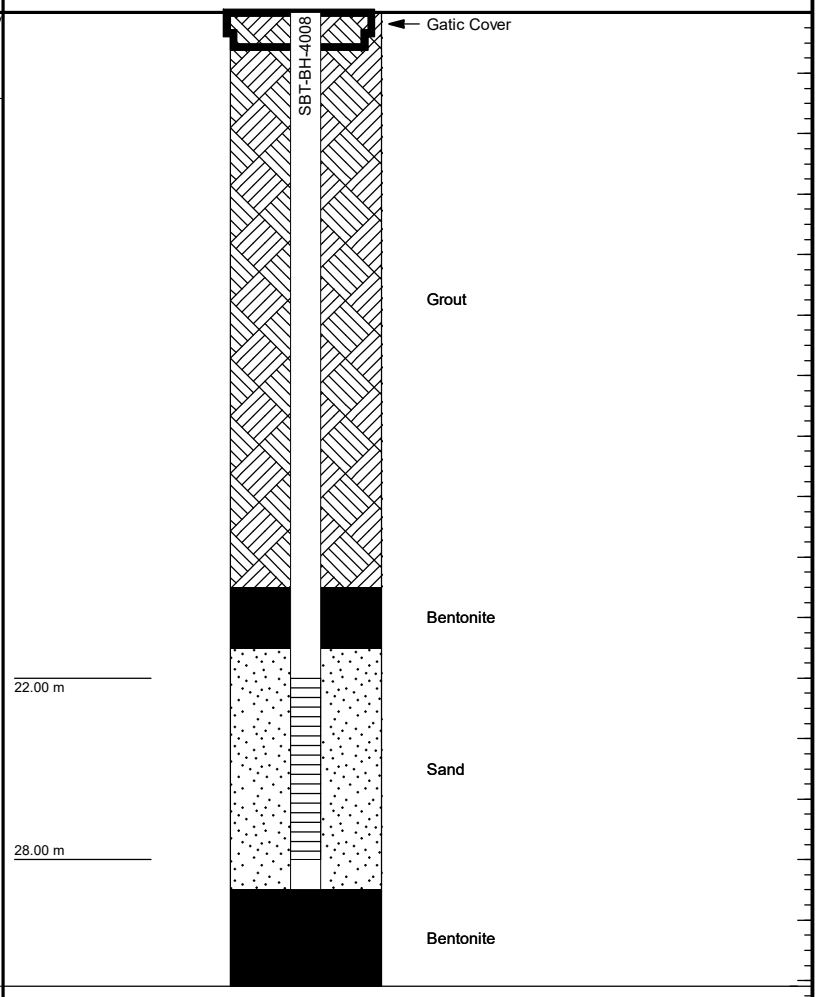
equipment type: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, C	Not Observable				**TOPSOIL**
					RESIDUAL SOIL
HQ					**BEDROCK**
			8		
			16		
			24		
			32		

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-BH-4008	Standpipe piezometer			1.00 m	29.00 m				

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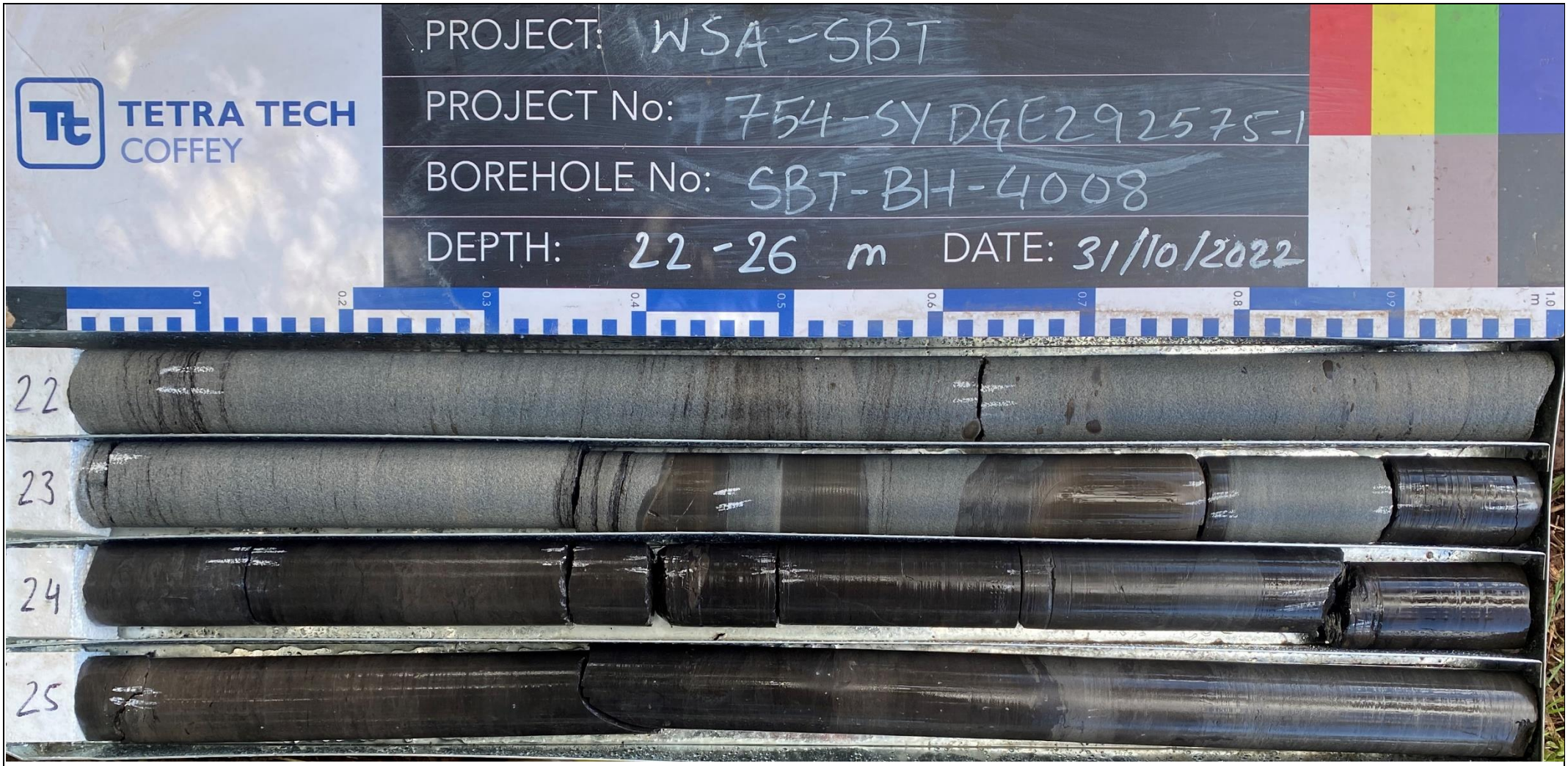
drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

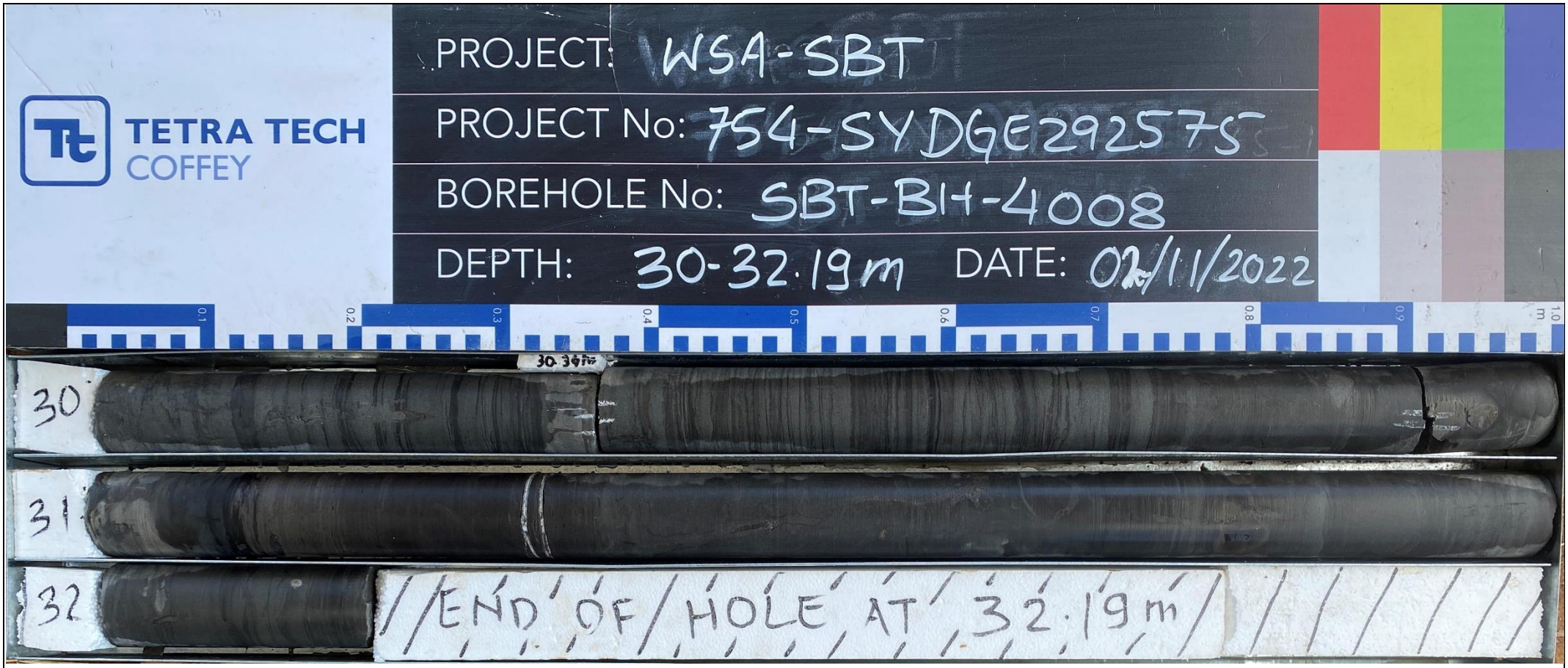
drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 4**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 6**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 7**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 8**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	1 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
HA, PVC casing			E					**ASPHALT**.	D	F		**ASPHALT** PID: 0.4 ppm
			E					**GRAVELLY SAND**: fine to medium grained, brown, gravels are sub-angular to sub-rounded, trace roots and clay.	D			**FILL** PID: 0.5 ppm
			E					**CLAY**: high plasticity, red to brown, trace of fine sand. trace fine gravels appearing, becoming grey, mottled brown	<Wp			**NATURAL** PID: 0.9 ppm PID: 0.6 ppm
AD/T			E SPT 2, 4, 5 N*=9		1.0							**RESIDUAL?** HP 190 kPa HP 220 kPa HP 200 kPa HP 320 kPa PID: 0.4 ppm
			E SPT 7, 10, 12 N*=22		2.0			**CLAY**: high plasticity, grey, mottled red brown, trace sand rock texture observed.	<Wp	St - VSt	>600 >600	**RESIDUAL** HP 420 kPa HP 600 kPa HP 600 kPa HP 310 kPa
N					3.0			Borehole SBT-BH-4010 continued as cored hole				
					4.0							
					5.0							
					6.0							
					7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	2 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
			1.0 2.0		started coring at 2.60m						
HQ			3.0		high plasticity.	XW					
					SILTSTONE: grey, mottled red, distinctly bedded at 0-5°. pale grey to orange brown mottles	HW			85%		SM, 0 - 5°, Clay, 65 mm SM, 0 - 5°, Clay, 30 mm PT, 5°, PL, RO, Clay CO SM, 80°, Clay, 290 mm PT, 5°, PL, RO, Clay CO SM, 5°, Clay, 40 mm
			4.0		**SILTSTONE**: dark grey, indistinctly bedded at 5°, trace iron indurated gravels.	HW					
					NO CORE: 0.08 m become grey	HW					
			5.0		**INTERBEDDED SILTSTONE (70%) AND SANDSTONE (30%)**: siltstone dark grey, sandstone: fine grained, brown. Indistinctly bedded at 0-10°, with ironstone gravels. iron indurated cobble interlaminated siltstone (60%) and sandstone (40%) Siltstone: grey. Sandstone: fine grained, grey, mottled orange brown distinctly laminated at 0-5°	MW			77%		PT, 10°, CU, RO, Fe SN JT, 55°, PL, RO, Fe SN PT, 0°, PL, RO, Fe SN PT, 0°, PL, RO, Clay CO PT, 0°, PL, RO, Fe SN PT, 80°, PL, RO, Fe SN PT, 5°, PL, RO, Clay VN PT, 70°, PL, RO, Clay VN PT, 5°, PL, RO, Clay CO
			6.0								SM, 0 - 10°, Clay, 80 mm PT, 10°, PL, RO, Clay CO PT, 5°, PL, RO, Clay CO PT, 5°, PL, RO, Clay CO
			7.0		**SILTSTONE**: grey, mottled orange, indistinctly bedded at 0-10°. becmoing dark grey with grey weathered bands orange to red sandstone bands appearing	HW			95%		PT, 15°, PL, RO, Clay VN JT, 50°, PL, RO, Fe SN PT ?, 10°, PL, RO, Clay CO PT, 10°, PL, RO, Clay CO PT, 10°, CU, RO, Fe SN PT, 10°, IR, RO, Fe SN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	3 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					**SANDSTONE**: fine to medium grained, pale grey, mottled red brown, massive with iron indurated mottling and (white bubbling?). *(continued)*	HW					
					becoming a grey mottled orange	SW - MW			95%		PT, 5°, PL, RO, Fe SN
					thing carbonaceous banding						PT, 0°, PL, RO, Fe
					becoming pale grey, distinctly cross-bedded at 0-10°						JT, 15°, PL, RO, Fe
			9.0		becoming pale brown						
					siltstone bands	MW					PT, 0°, IR, RO, CA CO, Carbonite infill
					SILTSTONE: dark grey, distinctly bedded at 0-10°.						
					iron indurated cobbles						PT, 15°, PL, RO, Clay CO
					grey, mottled orange brown	SW - MW					PT, 10°, PL, RO, Fe SN; PT, 10°, PL, RO, Fe SN
			10.0						99%		
					grey siltstone band						PT, 5°, PL, RO, Clay CO
			11.0								
					grey cobbles (possible sandstone)						PT, 10°, CU, RO, Clay VN
					INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%): sandstone: fine grained, grey. siltstone: dark grey. distinctly cross laminated at 0-15°.	SW					PT, 15°, PL, RO, Clay VN
			12.0		siltstone clast 50% siltstone and 50% sandstone						
			13.0		siltstone clast						PT, 5°, PL, RO, CN; JT, 55°, PL, RO, CN; PT, 5°, PL, RO, CN; JT, 75°, PL, RO, CN; PT, 0°, PL, RO, Clay VN; PT, 10°, PL, RO, CN; PT, 5°, IR, RO, Clay VN
					SILTSTONE: dark grey, distinctly bedded at 0-10°.	SW			97%		
			14.0		fine grained sandstone clasts						PT, 5°, IR, RO, Clay VN
					siltstone and sandstone clast						
					thin fine grained sandstone bands						
			15.0		band laminated with sandstone						JT, 20°, PL, RO, Clay VN, 27 mm, 14.88-15.15
					band laminated with sandstone						
	30-40% loss				calcute indurated into joint				97%		PT, 0°, PL, RO, CN; JT, 85°, PL, RO, CA SN; PT, 5°, PL, RO, CA SN; PT, 0°, PL, RO, CA SN
					calcite band; calcite band	SW					

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	4 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					**SANDSTONE**: medium grained, grey, indistinctly bedded at 5-10°. *(continued)*	SW					PT, 10°, PL, RO, Clay VN
			17.0		cabonaceous (?) laminate				97%		
					siltstone clast	SW					
					SILTSTONE: dark grey, indistinctly bedded at 0-5°.						PT, 15°, IR, RO, CN
			18.0		interlaminated sandstones silstone gravel						
			19.0								PT, 5°, CU, RO, Clay VN PT, 10°, PL, RO, Clay VN PT, 5°, IR, RO, Carbonaceas infill (?)
					sandstone bands up to 5mm width	SW					
					SANDSTONE: fine grained, grey, indistinctly bedded at 0-5°, with some siltstone (laminate?).				96%		PT, 5°, PL, RO, CN
					SILTSTONE: grey, indistinctly bedded at 0-5°.	MW					
			20.0		becoming dark grey						PT, 5°, PL, RO, Clay VN
											PT, 10°, PL, RO, Clay CO
			21.0								
					thin calcite bands up to 3mm	MW					PT, 5°, PL, RO, Crushed rock CS, 0 - 10°, Crushed rock and calcite
					sandstone band						PT, 0°, PL, RO, Clay VN PT, 0°, PL, RO, Clay CO
			22.0								CS, 10°, Crushed rock
						SW			95%		
			23.0		interbedded dark grey bands						PT, 5°, IR, RO, Clay VN
					INTERLAMINATED SILTSTONE (90%) AND SANDSTONE (10%): siltstone: dark grey. sandstone: fine grained, grey. distinctly laminated at 0-10°.	SW					
					sandstone gravel band (possible breccia?)	SW					

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-BH-4010.GPJ <<DrawingFile>> 21/06/2022 12:27

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	5 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ			25.0		**SILTSTONE**: dark grey, distinctly bedded at 0-5°. *(continued)* calcite bands	SW			100%		PT, 5°, PL, RO, Clay CO PT, 0°, PL, RO, Clay VN JT, 50°, PL, SO, Clay VN JT, 50°, PL, SO, CN
			26.0		shale brecciated band sandstone gravels, slightly weathered						JT, 45°, PL, SO, Clay VN
			27.0		**SANDSTONE**: fine grained, grey, with thin siltstone wavy(?) bands, indistinctly bedded at 0-5°. siltstone band becoming interbedded with siltstone, 80% sandstone, 20% siltstone at 0-5°	SW - FR					PT, 5°, CU, RO, Clay VN
			28.0		**SILTSTONE**: dark grey, distinctly bedded at 0-5°, with some sandstone laminate and bands. sandstone induration (?) wavy appearance sandstone band 5mm	SW - FR			100%		PT, 5°, RO, Clay VN
			29.0		sandstone gravel 30mm interbedded with sandstone at 0-10° (65% siltstone and 35% sandstone)						PT, 10°, UN, RO, CN CS, 10°, Crushed rock, 15 mm PT, 10°, PL, RO, Clay CO PT, 5°, PL, RO, Clay CO
			30.0		**SILTSTONE**: dark grey, indistinctly bedded at 0-5°. sandstone gravels with sandstone bands at 0-20°	MW - SW					JT, 75°, PL, RO, CN PT, 5°, PL, RO, Clay VN
			31.0		sandstone gravel, medium grained **SANDSTONE**: fine grained, grey, distinctly bedded at 0-10° with siltstone laminations. thin calcite bands calcite band interlaminated band				140%		PT, 15°, CU, RO, CA SN JT, 80°, CU, RO, CN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-BH-4010.GPJ <<DrawingFile>> 21/06/2022 12:27

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	6 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ			33.0		**SANDSTONE**: medium grained, grey, indistinctly bedded at 0-10°. *(continued)* siltstone banding dark grey, fine grained band trace thin siltstone lenses siltstone bands shale breccia	MW - SW			100%		JT, 60°, PL, RO, CN PT, 0°, PL, RO, CN
			34.0		**SILTSTONE**: dark grey, distinctly bedded at 0-5°.						PT, 5°, PL, RO, CA SN
					Borehole SBT-BH-4010 terminated at 34.00 m Target depth						
			35.0								
			36.0								
			37.0								
			38.0								
			39.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-BH-4010.GPJ <<DrawingFile>> 21/06/2022 12:27

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

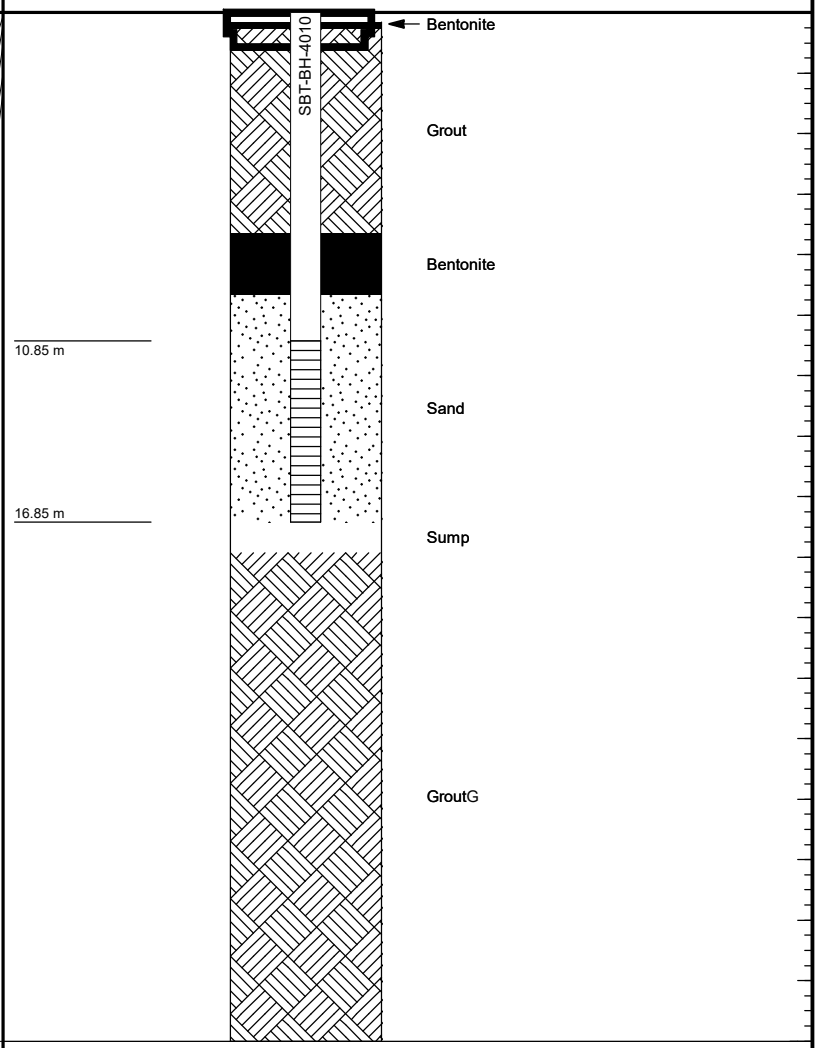
position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

equipment type: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover | bore construction license:
pvc type: | drilling company:
sand type: | driller:
grout type: | driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
HA, AD/T, PVC casing					ASPHALT
					FILL
					NATURAL
					RESIDUAL?
					RESIDUAL
			8		
			16		
			24		
HQ, N			32		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-BH-4010	Standpipe piezometer				16.85 m				

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF PIEZOMETER ONE PAGE SUMMARY SBT-BH-4010.GPJ <<DrawingFile>> 14-07-2022 13:10

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-CM-1020***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT- CM-1020*	project no.	***754-SYDGE292575***
location:	*11 Queen Street*	date started:	***09 Jun 2022***
		date completed:	***09 Jun 2022***
		logged by:	***J.Y***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
HA			B+J+P					**FILL: Gravelly SAND**: fine to medium grained, sub-angular to angular, dark brown, asphalt pieces.	D			**FILL** PID: 1.7 ppm
			J+P				CL	**Sandy CLAY**: medium plasticity, pale red/ dark brown, fine to medium sand.		F		**RESIDUAL SOIL** PID: 1.1 ppm
					1.0							PID: 1 ppm
					2.0							
					3.0							
					4.0		CH	**Sandy CLAY**: high plasticity, pale red/ pale brown, fine to medium sand.	M			
SS					5.0							
					6.0							
					7.0							
									W			

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-CM-1020.GPJ <<DrawingFile>> 27/10/2022 14:42

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-CM-1020*
principal:	*Sydney Metro*	sheet:	2 of 2
project:	*WSA SBT- CM-1020*	project no.	*754-SYDGE292575*
location:	*11 Queen Street*	date started:	*09 Jun 2022*
		date completed:	*09 Jun 2022*
		logged by:	*J.Y*
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 100 mm

drilling information						material substance							
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
SS							CH	**Sandy CLAY**: high plasticity, pale red/ pale brown, fine to medium sand. *(continued)* 8.1 m: becoming pale grey/ dark grey	W	F		**RESIDUAL SOIL**
					9.0							
					10.0							
					11.0							
					12.0							
								Borehole SBT-CM-1020 terminated at 12.5 m				
					13.0							
					14.0							
					15.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-CM-1020.GPJ <<DrawingFile>> 27/10/2022 14:42

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-CM-1020***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT- CM-1020*	project no.	***754-SYDGE292575***
location:	*11 Queen Street*	date started:	***09 Jun 2022***
		date completed:	***09 Jun 2022***
		logged by:	***J.Y***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

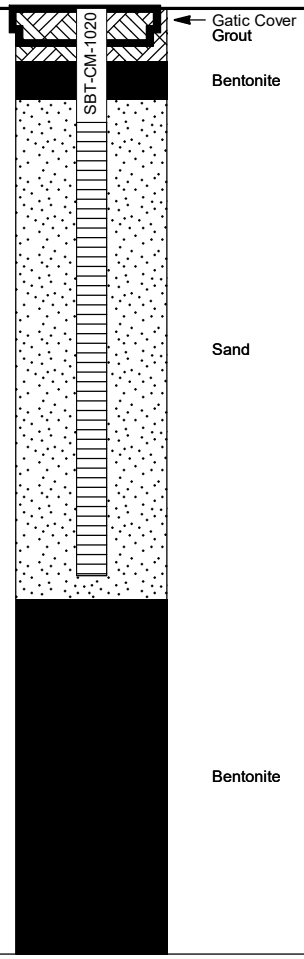
equipment type: Geoprobe, Track mounted | drilling fluid: | hole diameter : 100 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
HA			0		**FILL**
					RESIDUAL SOIL
SS			1		
			2		
			3		
			4		
			5		
			6		
			7		
			8		
			9		
			10		
			11		
			12		
			13		
			14		
			15		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-CM-1020	Gatic Cover piezometer				7.50 m				

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF PIEZOMETER ONE PAGE SUMMARY SBT-CM-1020.GPJ <<DrawingFile>> 27/10/2022 14:45

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-CM-1030***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Gipps St RECREATION PRECINCT*	date started:	***17 Aug 2022***
		date completed:	***17 Aug 2022***
		logged by:	***JE***
		checked by:	

position: E: 291923; N: 6260911 (GDA2020 MGA) surface elevation: 36.92 m (AHD) angle from horizontal: 90°

drill model: Geoprobe 300 drilling fluid: Water hole diameter : 120 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS		Not Encountered	E				CL	**TOPSOIL: SILT**: low liquid limit, dark brown.	~Wp	St		**TOPSOIL**
								Silty CLAY: medium plasticity, red-brown grading to grey mottled red-brown.				**RESIDUAL SOIL**
			E	36	1.0							
			SPT 3, 3, 5 N*=8						<Wp			HP =280 kPa HP =470 kPa
			E	35	2.0							
			SPT 3, 4, 7 N*=11									HP >400 kPa
			E	34	3.0							
								3.2 m: Indurated ironstone bands				
			E	33	4.0							
			SPT 3, 7, 7 N*=14									HP =410 kPa >>HP >600 kPa
			E	32	5.0							
			SPT 2, 4, 8 N*=12									HP >500 kPa
			E	31	6.0							HP <=400 kPa
								SHALE: yellow brown, with clay band, extremely weathered, estimated very low to low strength.				**EXTREMELY WEATHERED SHALE**
			E	30	7.0							
				29				Borehole SBT-CM-1030 terminated at 7.0 m Target depth				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-CM-1030.GPJ <<DrawingFile>> 24/03/2023 14:11

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	1 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, CASING, N		Not Observed		49				**FILL: CLAY**: high plasticity, brown to dark brown, with fine to medium SAND, with fine to coarse, sub-angular to sub-rounded GRAVELS.				**FILL**
							CH	**CLAY**: high plasticity, red mottled orange, trace fine, sub-angular to sub-rounded GRAVELS.	>Wp	VSt - H		**RESIDUAL SOIL**
			SPT 4, 4, 7 N*=11	48	1.0						HP 300 kPa HP 350 kPa HP 340 kPa	
				47	2.0			1.6 to 2.0 m: Returning fine to medium, sub-angular to sub-rounded gravels				
			SPT 9, 9, 10 N*=19	46	3.0		CH	**CLAY**: high plasticity, pale grey mottled red-orange, trace fine to medium, sub-angular to sub-rounded GRAVELS.	<Wp	Fb	>HP >600 kPa >HP >600 kPa >HP >600 kPa	
			SPT 12, 13, 27 N*=40	45	4.0							
				44	5.0		CH	**Silty CLAY**: high plasticity, pale grey mottled red and orange, rock texture evident (extremely weathered SILTSTONE).		Fb		**EXTREMELY WEATHERED SILTSTONE**
				43	6.0			Borehole SBT-GW-1001 continued as cored hole				
				42	7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:20

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	2 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance							rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		49									
		48	1.0								
		47	2.0								
		46	3.0								
		45	4.0								
		44	5.0		started coring at 5.80m						
HQ	Not Observed	43	6.0		**Silty CLAY**: high plasticity, pale grey mottled red to pale brown, with ironstone bands, rock texture evident (extremely weathered SILTSTONE).	XW	X<<	a=0.02			
		42	7.0				⊠<<	d=0.02 a=0.03	0%		

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	3 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	41		**Silty CLAY**: high plasticity, pale grey mottled red to pale brown, with ironstone bands, rock texture evident (extremely weathered SILTSTONE). *(continued)*	XW			0%		
		40	9.0	**SILTSTONE**: grey mottled brown, indistinctly bedded at 0-5°.	HW		d=0.03 a=0.02			SM, Clay, 30 mm; JT, 50°, PL, SO, VN
				9.30 m: Ironstone nodes up to 30 mm			d=0.03 a=0.03	96%		JT, 80°, PL, SO, VN; JT, 30°, PL, SO, VN; SM, 50°, Clay, 50 mm; JT, 60°, PL, SO, VN; PT, 0°, PL, SO, Clay CO, 3 mm; JT, 50°, PL, RO, VN; JT, 60°, PL, SO, Closed
		39	10.0	10.10 to 10.20 m: Ironstone bands up to 10 mm thick						
		38	11.0				d=0.08 a=0.03	96%		JT, 60°, PL, SO; JT, 30°, PL, VN; SM, Clay, 50 mm
		37	12.0				d=0.04 a=0.04			PT, 15°, PL, SO, VN; PT, 0°, PL, SO, VN; Clasm; PT, 5°, PL, SO, VN
		36	13.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: SANDSTONE is fine to medium grained and grey, SILTSTONE is dark grey, distinctly laminated at 0-5°.	SW		d=0.06 a=0.07	92%		PT, 5°, PL, SO, VN; SM, Clay
		35	14.0				d=0.24 a=0.20			
					MW - HW					PT, 0°, PL, SO, Clay CO, 3 mm; SM PT, 5°, PL, SO, Clay, 4 mm; SM, Clay, 50 mm; SM, Clay, 60 mm
		34	15.0	15.15 to 15.17 m: Ironstone band, 20 mm; 15.25 to 15.50 m: SANDSTONE band, fine grained, light grey, silty laminations	SW		d=0.14 a=0.11 d=0.26 a=0.26	89%		SM, Clay, 20 mm; SM, Clay, 10 mm; SM, Clay, 10 mm
				SILTSTONE: dark grey, indistinctly laminated 0-5°, with 5% fine grained SANDSTONE phases and bands.						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	4 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	33		**SILTSTONE**: dark grey, indistinctly laminated 0-5°, with 5% fine grained SANDSTONE phases and bands. *(continued)*	SW		d=0.13 a=0.12	89%		JT, 50°, PL, SO, VN; SM, Clay, 10 mm
		32	17.0				a=0.09			JT, 45°, PL, SO, CN
								92%		PT, 5°, PL, SO, VN; PT, 0°, PL, SO, VN
		31	18.0							
		30	19.0				d=0.24 a=0.23; d=0.07 a=0.14	96%		PT, 15°, PL, SO, CN, Closed; PT, 10°, IR, SO, CN; PT, 5°, IR, SO, CN; JT, 40°, PL, SO, CN; SM, Clay, 100 mm; SM, Clay, 10 mm; PT, 0°, PL, SO, Clay CO, 3 mm; PT, 0°, PL, SO, VN
		29	20.0		FR		d=0.36 a=0.37			PT, 0°, PL, RO, CN
		28	21.0	21.60 to 21.90 m: SANDSTONE laminations						
		27	22.0	**INTERBEDDED SILTSTONE (80%) AND SANDSTONE (20%)**: SILTSTONE is dark grey, SANDSTONE is fine grained and pale grey. 22.50 to 22.68 m: Healed calcite veining 22.50 to 22.70 m: fine SANDSTONE, with distinct silty laminations			d=0.11 a=0.37; d=0.10 a=0.29	97%		PT, 0°, PL, RO, CA CO, 1 mm; PT, 0°, PL, RO, CA CO, 1 mm
		26	23.0				d=0.18 a=0.26			PT, 20°, PL, SO, CN, Closed; PT, 5°, PL, SO, CN, Closed; JT, 40°, PL, SO, VN; JT, 60°, PL, SO, VN; PT, 0°, PL, SO, VN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	5 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	25			FR			100%		
				SILTSTONE: dark grey, indistinctly laminated at 0-5°. 24.60 to 24.80 m: With fine, rounded shale breccia nodes			d=0.25 a=0.27			At 23.90-24.60 m: Sample broken while drilling
		24	25.0					100%		
							d=0.91 a=0.63			
		23	26.0	**INTERLAMINATED SILTSTONE (80%) AND SANDSTONE (20%)**: SILTSTONE is dark grey, SANDSTONE is pale grey, distinctly laminated at 0-10°.						
							d=0.21 a=0.79			
		22	27.0							
				SANDSTONE: fine grained, massive, pale grey, with silty laminations clasts.			d=0.98 a=0.81			PT, 5°, PL, RO, SN
		21	28.0	**SILTSTONE**: dark grey, distinctly laminated 0-5°, with occasional SANDSTONE laminations up to 10%. 28.17 m: 5% pale grey, fine grained SANDSTONE 28.50 m: pale brown SANDSTONE clasts				93%		PT, 0°, PL, SO, VN; PT, 0°, PL, SO, VN; PT, 15°, PL, SN
		20	29.0				d=0.39 a=0.31			PT, 0°, PL, SO, CN; JT, 25°, PL, SO, CN
				INTERBEDDED SILTSTONE (80%) AND SANDSTONE (20%): SILTSTONE is dark grey, SANDSTONE is fine grained and pale grey.						JT, 20°, IR, SO, CN
		19	30.0				d=0.32 a=0.35			
							d=0.37 a=0.53	93%		
		18	31.0				d=0.35 a=0.54			
				31.45 to 31.49 m: SANDSTONE band, fine to medium grained, pale grey						PT, 0°, PL, SO, CN; JT, 25°, PL, SO, CN; JT, 25°, PL, SO, CN; JT; PT, 0°, PL, SO, VN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	6 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 X = axial; O = diametral VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	17			**INTERBEDDED SILTSTONE (80%) AND SANDSTONE (20%)**: SILTSTONE is dark grey, SANDSTONE is fine grained and pale grey. *(continued)*	FR		d=0.31 a=0.59	93%		PT, 0°, PL, SO, VN PT, 0°, PL, SO, VN
		16	33.0		33.40 to 33.80 m: interlaminated			d=0.10 a=0.20			JT, 0°, PL, SO, VN
		15	34.0					d=0.15 a=0.23	86%		PT, 5°, IR, RO, CN
					NO CORE: 0.18 m						
		14	35.0		**SILTSTONE**: dark grey, distinctly laminated 0-5°.						PT, 0°, PL, SO, CN
					Borehole SBT-GW-1001 terminated at 35.00 m Target depth						
		13	36.0								
		12	37.0								
		11	38.0								
		10	39.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

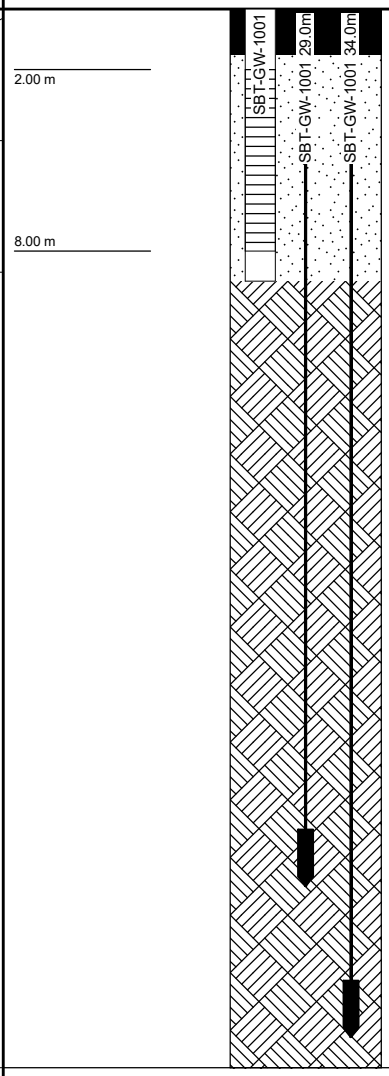
equipment type: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T; CASING	Not Encountered	48			**FILL**
					RESIDUAL SOIL
					EXTREMELY WEATHERED SILTSTONE
			8		
HQ		40			**BEDROCK**
			16		
		32			
			24		
		24			
			32		
		16			



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1001	standpipe piezometer				9.00 m			40.06	
SBT-GW-1001	vibrating wire piezometer				29.00 m			20.06	
29.0m	vibrating wire piezometer				34.00 m			15.06	
SBT-GW-1001 34.0m									

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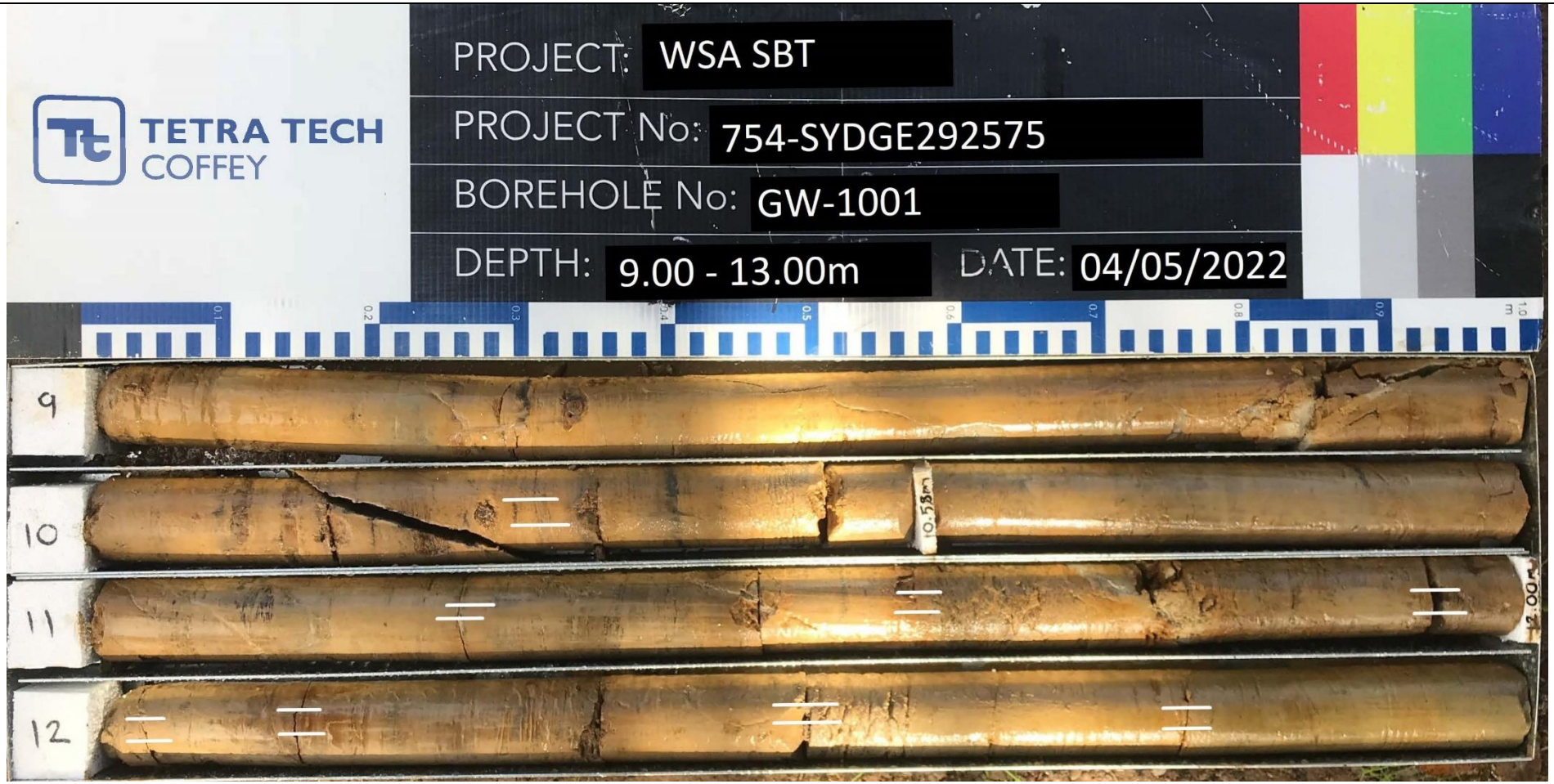
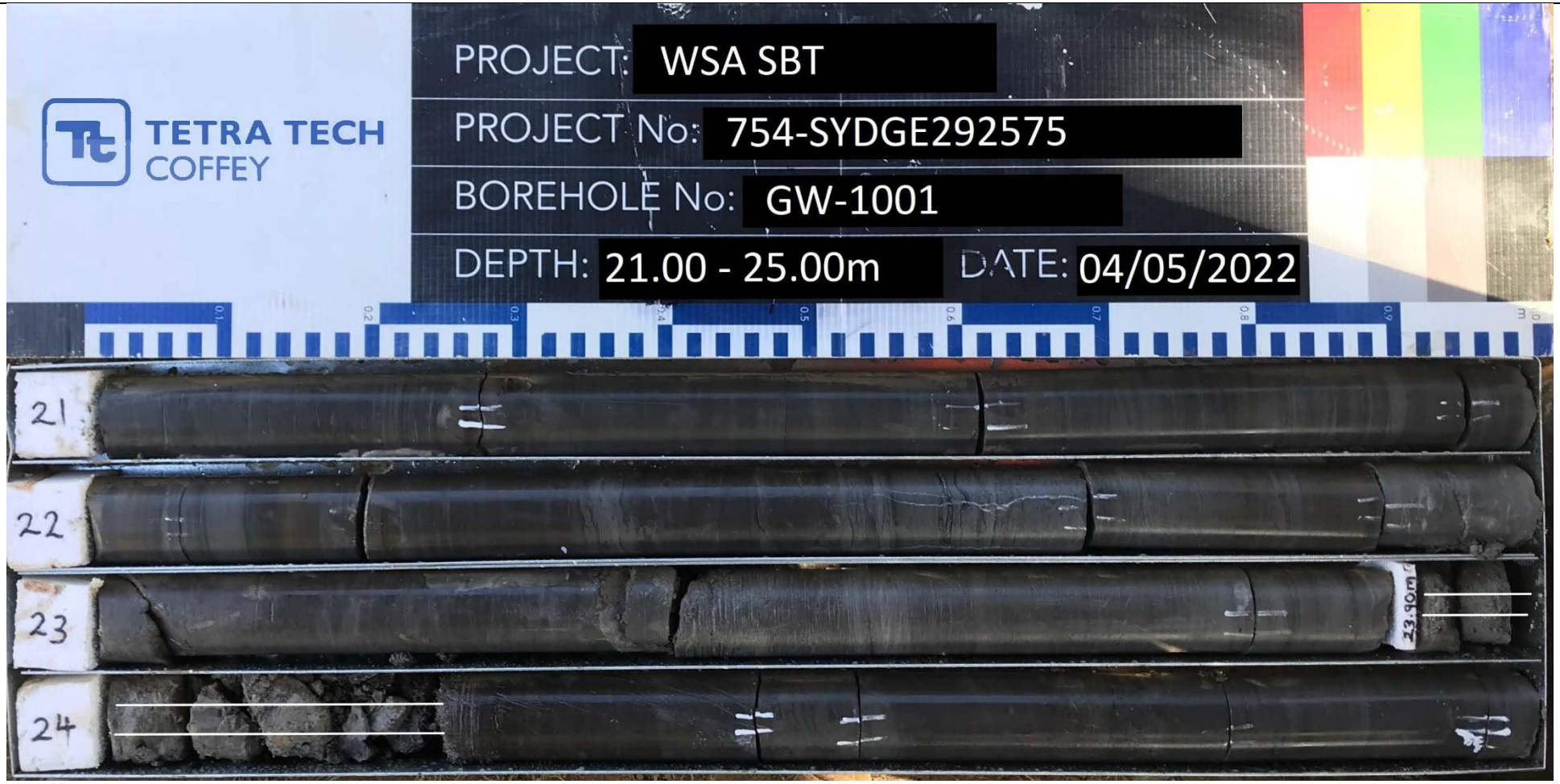
drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 4**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 6**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 7**

drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	23/09/2022		title:	CORE PHOTOGRAPH SBT-GW-1001
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 8

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1012***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Street, St Marys, NSW*	date started:	***12 Dec 2022***
		date completed:	***12 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
NDD								**BRICK PAVEMENT**.				**BRICK PAVEMENT**
								CONCRETE.				**CONCRETE**
								NDD: up to 1.80 m.				**NON-DESTRUCTIVE DRILLING**
					1.0							
HS, C					2.0		CH	**Silty CLAY**: high plasticity, red-brown, grey.	>Wp	F		**RESIDUAL SOIL**
		12/12/22	E		3.0							
					4.0			3.6 m: becoming brown and grey, tace fine gravels and fine sand				
					5.0					St		
			E		6.0		CH	**Sandy CLAY**: high plasticity, pale grey, pale grey fine sand, with fine to medium grained gravel.				
					7.0		CL	**Gravelly CLAY**: low plasticity, pale brown, red, fine to medium grained gravels, with fine sands.		VSt		
			E									

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1012.GPJ <<DrawingFile>> 16/12/2022 11:56

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1012***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Street, St Marys, NSW*	date started:	***12 Dec 2022***
		date completed:	***12 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa)	soil origin, structure and additional observations
HS, C								**SILTSTONE**: brown, extremely weathered, rock fabrics and ironstone visible.				**EXTREMELY WEATHERED BEDROCK**
W, N					9.0 10.0 11.0 12.0 13.0 14.0 15.0			**SILTSTONE**: dark brown. 12.0 m: becoming dark grey to grey				**BEDROCK**

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1012.GPJ <<DrawingFile>> 16/12/2022 11:56

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1012***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Street, St Marys, NSW*	date started:	***12 Dec 2022***
		date completed:	***12 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information						material substance						
method & support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) (100 200 300 400)	soil origin, structure and additional observations
W N								**SILTSTONE**: dark brown. *(continued)*				**BEDROCK**
								Borehole SBT-GW-1012 terminated at 16.5 m Target depth				
					17.0							
					18.0							
					19.0							
					20.0							
					21.0							
					22.0							
					23.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1012.GPJ <<DrawingFile>> 16/12/2022 11:56

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1012***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Street, St Marys, NSW*	date started:	***12 Dec 2022***
		date completed:	***12 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

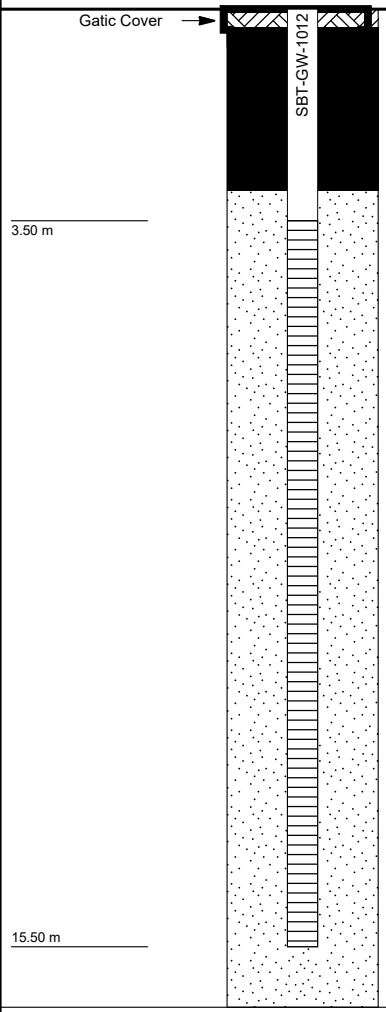
equipment type: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
NDD					**BRICK PAVEMENT**
					CONCRETE
					NON-DESTRUCTIVE DRILLING
					RESIDUAL SOIL
HS, C	12/12/22		4		
			8		**EXTREMELY WEATHERED BEDROCK**
					BEDROCK
W, N			12		
			16		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1012	Standpipe piezometer				15.50 m				

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1013***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Entry, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
NDD								**BRICK PAVEMENT**.				**BRICK PAVEMENT**
								CONCRETE.				**CONCRETE**
								NON-DESTRUCTIVE DRILLING: up to 2.0 m.				**NDD**
					1.0							
HS C					2.0		CH	**Gravelly CLAY**: high plasticity, red-brown, grey, fine to medium grained gravel up to 10 mm in diameter, with fine sand.	>Wp	F		**RESIDUAL SOIL**
		08/12/22	E		3.0							
			E				CH	**Silty CLAY**: high plasticity, red-brown, grey, trace fine sand. 3.8 m: becoming orange-brown, grey		St		
					4.0							
					5.0							
			E					5.4 m: becoming pale grey, orange and red, with fine ironstone gravels		VSt		
					6.0							
					7.0							
								SILTSTONE: pale brown, extremely weathered, rock fabrics and ironstone visible.				**EXTREMELY WEATHERED BEDROCK**

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-1013***
principal:	***Sydney Metro***	sheet:	2 of 3
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Station Entry, St Marys, NSW***	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
HS, C								**SILTSTONE**: pale brown, extremely weathered, rock fabrics and ironstone visible. *(continued)*				**EXTREMELY WEATHERED BEDROCK**
								SILTSTONE: pale brown, grey.				**BEDROCK**
					9.0							
					10.0							
								10.8 m: becoming dark grey				
					11.0							
W, N					12.0							
					13.0							
					14.0							
					15.0							

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-1013***
principal:	***Sydney Metro***	sheet:	3 of 3
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Station Entry, St Marys, NSW***	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information							material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
W N								**SILTSTONE**: pale brown, grey. *(continued)*				**BEDROCK**
								Borehole SBT-GW-1013 terminated at 16.5 m Target depth				
					17.0							
					18.0							
					19.0							
					20.0							
					21.0							
					22.0							
					23.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1013.GPJ <<DrawingFile>> 02/03/2023 16:07

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1013***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Entry, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

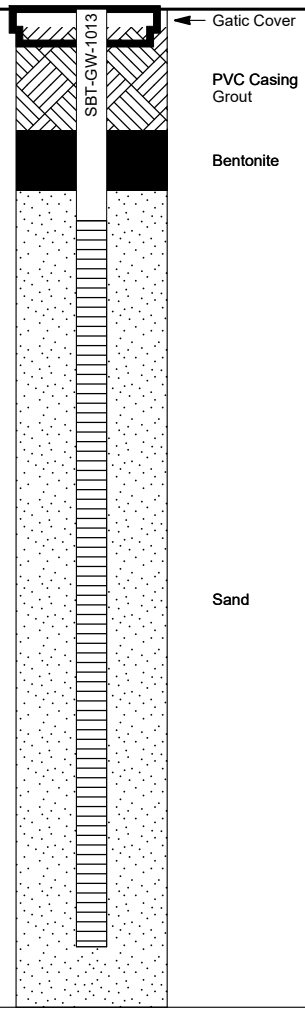
position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

equipment type: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:
bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
NDD					**BRICK PAVEMENT**
					CONCRETE
					NDD
					RESIDUAL SOIL
HS, C	08/12/22		4		
			8		**BEDROCK**
W, N			12		
			16		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1013	standpipe piezometer				15.50 m				

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY SBT-GW-1013.GPJ <<DrawingFile>> 14/12/2022 15:40

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1014***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*1 Queen Street, Station, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: 35.55 m (AHD) | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
								CONCRETE/BRICK PAVEMENT.				**CONCRETE**
NDD				35	1.0			**NON-DESTRUCTIVE DRILLING**: up to 2.0 m.				**NDD**
				34								
					2.0		CH	**Silty CLAY**: high plasticity, red, dark grey, with fine sand and fine grained gravel.	>Wp	St		**RESIDUAL SOIL**
		08/12/22	E	33	3.0							
				32								
C					4.0			4.0 m: becoming grey, orange and brown, with fine to medium gravels and fine sand		VSt		
				31								
AD/T					5.0							
			E				CH	**Silty CLAY**: high plasticity, orange-brown, grey.				
				30								
					6.0							
				29								
					7.0							
				28								
								SILTSTONE: red, orange, with ironstone gravels.				**BEDROCK**

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1014.GPJ <<DrawingFile>> 02/03/2023 15:32

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1014***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*1 Queen Street, Station, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: 35.55 m (AHD) | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, C								**SILTSTONE**: red, orange, with ironstone gravels. *(continued)*				**BEDROCK**
				27				**SILTSTONE**: dark grey, brown.				
					9.0							
				26								
					10.0							
				25								
					11.0							
W, N				24				11.5 m: becoming dark grey				
					12.0							
				23								
					13.0							
				22								
					14.0							
				21								
					15.0							
				20								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1014***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*1 Queen Street, Station, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: 35.55 m (AHD) | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information							material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
W N								**SILTSTONE**: dark grey, brown. *(continued)*				**BEDROCK**
				19				Borehole SBT-GW-1014 terminated at 16.5 m Target depth				
					17.0							
				18								
					18.0							
				17								
					19.0							
				16								
					20.0							
				15								
					21.0							
				14								
					22.0							
				13								
					23.0							
				12								

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1014.GPJ <<DrawingFile>> 02/03/2023 15:32

method

DT	diatube
AD	auger drilling*
AS	auger screwing*
HA	hand auger
W	washbore
RR	rock roller
*	bit shown by suffix
e.g.	AD/T
B	blank bit
T	TC bit
V	V bit

support

M	mud	N	nil
C	casing		

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown

water inflow

water outflow

samples & field tests

B	bulk disturbed sample
D	disturbed sample
E	environmental sample
SS	split spoon sample
U##	undisturbed sample ##mm diameter
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear; peak/remouded (kPa)
R	refusal
HB	hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1016***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Queen Street, St Marys, NSW*	date started:	***07 Oct 2022***
		date completed:	***07 Oct 2022***
		logged by:	***JE/RF***
		checked by:	

position: E: 293905; N: 6261843 (GDA2020 MGA) surface elevation: Not Specified angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
NDD								**ASPHALT CONCRETE**.				**ASPHALT CONCRETE**
								ROAD BASE.				
					1.0		OH	**Silty CLAY**: high plasticity, grey and red-brown.	M - ~Wp	St		**RESIDUAL SOIL**
			E		2.0		CL	**Sandy CLAY**: medium plasticity, pale grey, with some red-brown blotching.				
			E		3.0							
			SPT 3, 4, 5 N*=9									HP 200 - 250 kPa
N			E		4.0							
			SPT 7, 5, 7 N*=12				SC	**CLAYEY SAND**: fine to medium grained, pale grey, with sub-angular ironstone gravel up to 10 mm, trace of sandy clay.	M	MD		HP 130 - 200 kPa
SS			E		5.0							
			E		6.0							
			SPT 4, 6, 7 N*=13									HP 200 - 240 kPa
							CL	**Sandy CLAY**: low plasticity, pale grey, brown, with fine sand.	<Wp	St		
			E		7.0							
			SPT 34/120mm N*=R				CL	**Gravelly CLAY**: low plasticity, red-brown, with fine to medium iron indurated gravel, trace fine sand.		H		
			F									

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1016*
principal:	*Sydney Metro*	sheet:	2 of 2
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Queen Street, St Marys, NSW*	date started:	*07 Oct 2022*
		date completed:	*07 Oct 2022*
		logged by:	*JE/RF*
		checked by:	

position: E: 293905; N: 6261843 (GDA2020 MGA) surface elevation: Not Specified angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS, N							CL	**Gravelly CLAY**: low plasticity, red-brown, with fine to medium iron indurated gravel, trace fine sand. *(continued)* becoming pale grey, red-brown	<Wp	H		**RESIDUAL SOIL**
			E		9.0		CH	**Silty CLAY**: high plasticity, orange mottled grey.	>Wp			
			SPT 11, 26/145mm N*=R					**SILTSTONE**: dark grey, extremely weathered, estimated very low to low strength.			>>>	**EXTREMELY WEATHERED SILTSTONE** HP >600 kPa
			E		10.0							
			E		11.0			Borehole SBT-GW-1016 terminated at 11.0 m				
					12.0							
					13.0							
					14.0							
					15.0							

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	*SBT-GW-1016*
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Queen Street, St Marys, NSW*	date started:	*07 Oct 2022*
		date completed:	*07 Oct 2022*
		logged by:	*JE/RF*
		checked by:	

position: E: 293905; N: 6261843 (GDA2020 MGA) surface elevation: Not Specified angle from horizontal: 90°

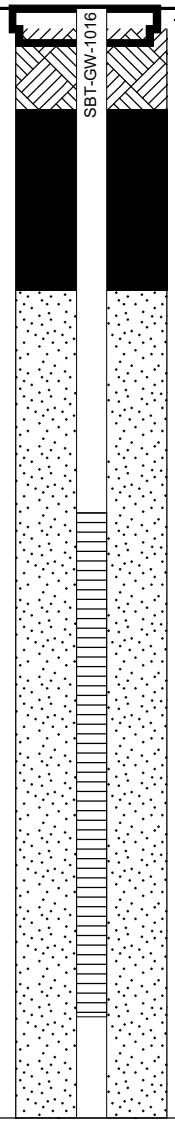
equipment type: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company: Numac
driller: Geoff Connor
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
NDD					ASPHALT CONCRETE
			1		RESIDUAL SOIL
			2		
			3		
			4		
			5		
N			6		
SS			7		
			8		
			9		EXTREMELY WEATHERED SILTSTONE
			10		
			11		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1016	Standpipe piezometer				11.00 m				

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1017***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*49 Forrester Road, St Marys, NSW*	date started:	***27 Sep 2022***
		date completed:	***27 Sep 2022***
		logged by:	
		checked by:	

position: E: 293946; N: 6262115 (GDA2020 MGA) surface elevation: 32.79 m (AHD) angle from horizontal: 90°

drill model: Geo 205 drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

samples & field tests	RL (m)	depth (m)	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
E				**ROAD SURFACE: ASHPHALT/DRIVEWAY CONCRETE.**				**ASPHALT**
E			SM	**FILL: Gravelly SAND**: medium to coarse grained, red-brown, with some silt/clay.	W			**FILL**
			CH	**SILTY SAND**: fine to coarse grained, grey, with characoal.	M	St		**RESIDUAL SOIL**
E	32	1.0	CH	**Sandy CLAY**: high plasticity, grey-green, with some sub-rounded gravel and charcoal up to 6 mm.	>Wp			
SPT 2, 4, 5 N*=9	31	2.0		**Silty CLAY**: high plasticity, yellow-brown with red-brown mottling, sandy in parts.				HP 180 kPa HP 180 kPa HP 200 kPa HP 240 kPa
E				1.7 m: grading to grey mottled red-brown	~Wp			
E	30	3.0		2.7 m: grading to pale grey, mottled brown, sandy in parts				
SPT 4, 7, 8 N*=15					>Wp			HP 240 kPa HP 220 kPa HP 200 kPa HP 180 kPa
E	29	4.0	CH	**Silty CLAY**: high plasticity, pale grey, mottled brown, sandy in parts.	~Wp			
SPT 4, 5, 9 N*=14	28	5.0						HP 240 kPa HP 260 kPa HP 320 kPa
E	27	6.0	SC	**CLAYEY SAND**: fine to medium grained, grey mottled orange-brown.	=Wp	MD		
SPT 5, 10, 12 N*=22				From 6.10 m: iron cemented layer				
E	26	7.0						
SPT 13, 10, 10 N*=20	25			From 7.40-7.65 m: iron cemented gravels				
E								

27/09/22

SS N

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-1017***
principal:	***Sydney Metro***	sheet:	2 of 2
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***49 Forrester Road, St Marys, NSW***	date started:	***27 Sep 2022***
		date completed:	***27 Sep 2022***
		logged by:	
		checked by:	

position: E: 293946; N: 6262115 (GDA2020 MGA) surface elevation: 32.79 m (AHD) angle from horizontal: 90°

drill model: Geo 205 drilling fluid: Water hole diameter : 110 mm

drilling information							material substance							
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
SS N			E	24	9.0		SC	**CLAYEY SAND**: fine to medium grained, grey mottled orange-brown. *(continued)* 8.0 to 8.6 m: Becoming gravelly	=Wp	MD		**RESIDUAL SOIL**
				23	10.0			Borehole SBT-GW-1017 terminated at 9.0 m				
				22	11.0							
				21	12.0							
				20	13.0							
				19	14.0							
				18	15.0							
				17								

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1017***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*49 Forrester Road, St Marys, NSW*	date started:	***27 Sep 2022***
		date completed:	***27 Sep 2022***
		logged by:	
		checked by:	

position: E: 293946; N: 6262115 (GDA2020 MGA) surface elevation: 32.79 m (AHD) angle from horizontal: 90°

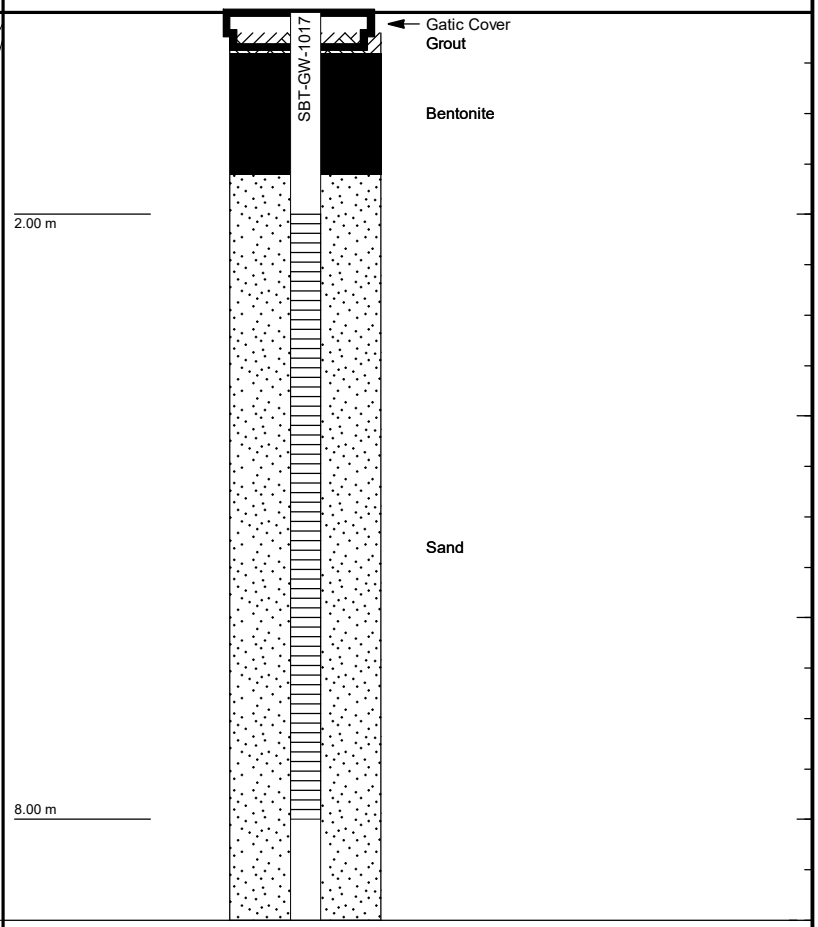
equipment type: Geo 205 drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company: Numac
driller: GC
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
SS, N	27/09/22	32	1		ASPHALT
					FILL
					RESIDUAL SOIL
		30	2		
			3		
		28	4		
			5		
		26	6		
			7		
		24	8		
		22	9		
			10		
			11		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1017	Standpipe piezometer				9.00 m			23.79	

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1019_R*
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*St Marys NSW*	date started:	*31 Aug 2022*
		date completed:	*01 Sep 2022*
		logged by:	*JF*
		checked by:	

position: E: 293888; N: 6261979 (GDA2020 MGA) surface elevation: 35.30 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD, N		Not Encountered		35				**Gravelly SAND**: fine to coarse grained, dark brown, with fine to medium gravels, foreign materials include terracotta pipe, brick, tile.	M			**FILL**
				34	1.0		CH	**Silty CLAY**: high plasticity, brown/red with grey speckles.	W	St		**RESIDUAL SOIL**
				33	2.0					VSt		
				32	3.0			3.5 m: colour change to grey				
				31	4.0							
				30	5.0							
				29	6.0							
				28	7.0		CL	**Silty Sandy CLAY**: medium plasticity, with fine to medium, angular grey sand.	~Wp	H		

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1019_R*
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*St Marys NSW*	date started:	*31 Aug 2022*
		date completed:	*01 Sep 2022*
		logged by:	*JF*
		checked by:	

position: E: 293888; N: 6261979 (GDA2020 MGA) surface elevation: 35.30 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD, N		Not Encountered		27			CL	**Silty Sandy CLAY**: medium plasticity, with fine to medium, angular grey sand. *(continued)*	~Wp	H		PID: 4.4 ppm **RESIDUAL SOIL**
			E		9.0							PID: 4.1 ppm
				26								
			E		10.0		CH	**Silty CLAY**: high plasticity, pale brown, small black nodules up to 2 mm.	<Wp			PID: 5.8 ppm
				25								
			E		11.0			10.7 m: colour change to dark grey/black, black nodules increase in size up to 5-10 mm				PID: 0.5 ppm
				24								
			E		12.0							PID: 0.5 ppm
				23								
			E		13.0							
				22								
			E		14.0							PID: 1.8 ppm
				21				14.2 m: 5% black nodules				
			E		15.0							PID: 1.4 ppm
				20								
			E									

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1019_R.GPJ <<DrawingFile>> 27/10/2022 10:54

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1019_R*
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*St Marys NSW*	date started:	*31 Aug 2022*
		date completed:	*01 Sep 2022*
		logged by:	*JF*
		checked by:	

position: E: 293888; N: 6261979 (GDA2020 MGA) surface elevation: 35.30 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD, N		Not Encountered	E	19, 18	17.0		CH	**Silty CLAY**: high plasticity, pale brown, small black nodules up to 2 mm. *(continued)* 16.0 m: siltstone fragments approx up to 10-30 mm	<Wp	H		PID: 1.6 ppm **RESIDUAL SOIL** PID: 1.9 ppm
			E		18.0			**CLAY**: high plasticity, pale grey to dark grey, rock texture evident (extremely weathered siltstone).				**EXTREMELY WEATHERED BEDROCK** PID: 1.4 ppm
				17, 16, 15, 14, 13, 12	19.0, 20.0, 21.0, 22.0, 23.0			Borehole SBT-GW-1019_R terminated at 18.0 m				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1019_R.GPJ <<DrawingFile>> 27/10/2022 10:54

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	*SBT-GW-1019_R*
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*St Marys NSW*	date started:	*31 Aug 2022*
		date completed:	*01 Sep 2022*
		logged by:	*JF*
		checked by:	

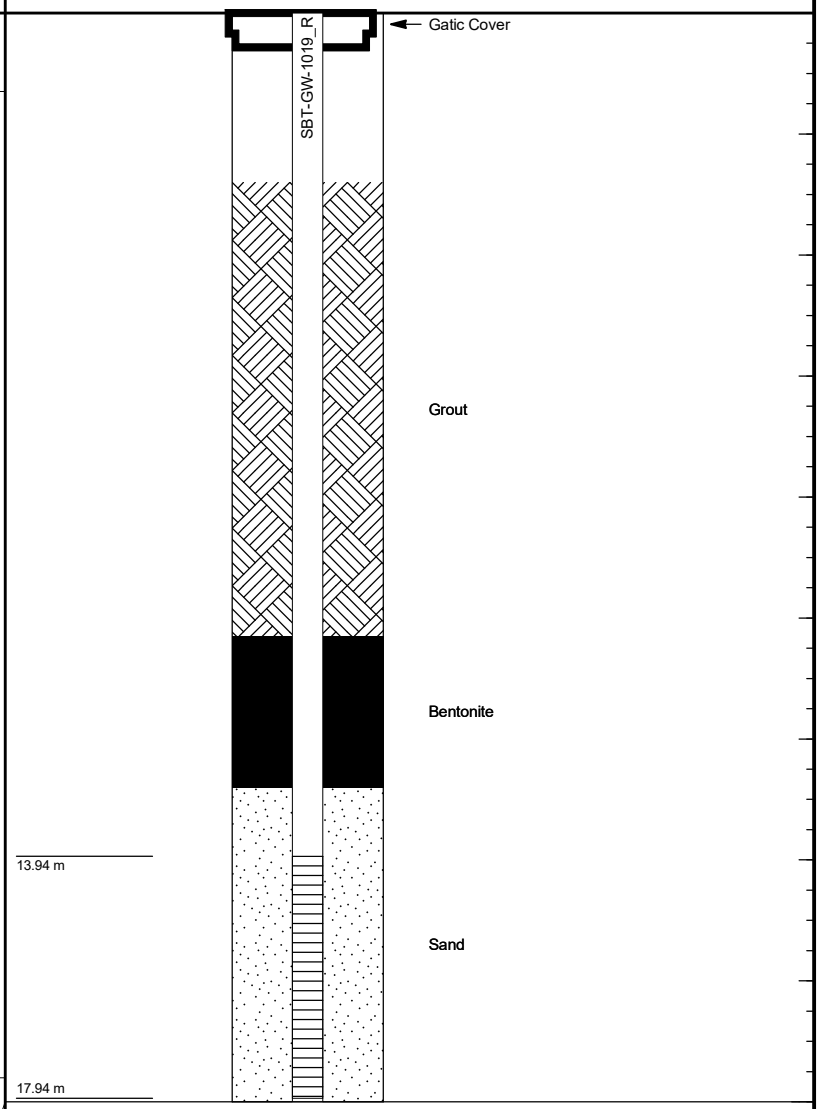
position: E: 293888; N: 6261979 (GDA2020 MGA) surface elevation: 35.30 m (AHD) angle from horizontal: 90°

equipment type: Geoprobe, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:
bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD / N	Not Encountered	32	4		**FILL**
					RESIDUAL SOIL
		28	8		
		24	12		
		20	16		
		16			**EXTREMELY WEATHERED BEDROCK**



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1019_R	Water Piezometer				18.00 m			17.30	

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY SBT-GW-1019_R.GPJ <<DrawingFile>> 27/10/2022 10:56

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1024***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*19 Gipps Street, Claremont Meadows, NSW*	date started:	***20 May 2022***
		date completed:	***20 May 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 292109; N: 6261303 (GDA2020 MGA) surface elevation: 27.92 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N								**FILL: Gravelly SAND**: fine to medium grained, grey, angular gravel up to 20 mm.				**FILL** PID: 0.5 ppm
							CL-CH	**CLAY**: medium to high plasticity, brown, trace gravel up to 5 mm.	>Wp	F - St		**POSSIBLE ALLUVIUM**
			SPT 2, 8, 13 N*=21	27	1.0					VSt		PID: 1.4 ppm
				26	2.0							PID: 1.2 ppm; HP 470 kPa; HP 240 kPa; HP 190 kPa
			SPT 9, 6, 7 N*=13	25	3.0		CH	**Gravelly CLAY**: high plasticity, pale grey, mottled brown, rounded to angular gravel up to 10 mm.		St		**RESIDUAL SOIL** PID: 1.6 ppm
			SPT 13, 16, 16 N*=32	24	4.0					VSt		PID: 0.8 ppm; HP 370 kPa; HP 120 kPa; HP 130 kPa
			SPT 6, 11, 20 N*=31	23	5.0							PID: 0.8 ppm
				22			CH	**CLAY**: high plasticity, with rounded gravel up to 10 mm, rock texture evident (extremely weathered siltstone).			>>>	**EXTREMELY WEATHERED MATERIAL** HP 600 kPa; HP 540 kPa; HP 570 kPa
					6.0			Borehole SBT-GW-1024 continued as cored hole				
				21	7.0							
				20								

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1024***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*19 Gipps Street, Claremont Meadows, NSW*	date started:	***20 May 2022***
		date completed:	***20 May 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 292109; N: 6261303 (GDA2020 MGA) surface elevation: 27.92 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		27	1.0								
		26	2.0								
		25	3.0								
		24	4.0								
		23	5.0								
		22			started coring at 5.95m						
HQ			6.0		**SILTSTONE**: recovered as sandy clay: medium to high plasticity, pale grey, fine to medium grained sand.	XW					JT, 45°, PL, RO, CO - Clay, XW JT, 20°, PL, RO, CO - Clay
		21	7.0		**SANDSTONE**: medium grained, brown, with 5-10% siltstone laminations, iron stained. 7.03 m: becoming grey, with distinctly laminated siltstone	MW SW		d=0.09 a=0.19 d=0.11 a=0.16	70%		JT, 90°, PL, RO, Fe CO - Clay JT, 60°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, Fe CO
		20									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1024***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*19 Gipps Street, Claremont Meadows, NSW*	date started:	***20 May 2022***
		date completed:	***20 May 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 292109; N: 6261303 (GDA2020 MGA) surface elevation: 27.92 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					**SANDSTONE**: medium grained, brown, with 5-10% siltstone laminations, iron stained. *(continued)*	SW		d=0.16 a=0.19	70%		
		19	9.0		**SANDSTONE**: fine to medium grained, grey, with 5% siltstone laminations, distinctly laminated between 0-5°.	FR		d=0.26 a=0.34			PT, 0°, PL, RO, CN; PT, 0°, PL, RO, CN; PT, 0°, PL, RO, CN; JT, 80°, PL, RO, CN; PT, 0°, PL, RO, CN
		18	10.0		**INTERBEDDED SILTSTONE (70%) AND SANDSTONE (30%)**: dark grey, sandstone is fine grained and grey, beds are up to 90 mm thick.			d=0.03 a=0.15	90%		PT, 0°, PL, RO, CN; JT, 70°, PL, RO, CN
					10.22 m: sandstone gravel clast			d=0.19 a=0.18			JT, 40°, PL, RO, CN
		17	11.0		10.76 m: sandstone gravel clast			d=0.37 a=0.19			
					11.20 m: sandstone gravel clast			d=0.14 a=0.16			PT, 0°, PL, RO, CO - Clay
					11.62 to 11.75 m: sandstone gravel clast						JT, 90°, PL, RO, CN
		16	12.0					d=0.19 a=0.17	100%		
								d=0.08 a=0.18			PT, 0 - 5°, PL, RO, CO - Clay
		15	13.0		Borehole SBT-GW-1024 terminated at 13.00 m Target depth						
		14	14.0								
		13	15.0								
		12									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1024.GPJ <<DrawingFile>> 21/11/2022 17:25

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1024***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*19 Gipps Street, Claremont Meadows, NSW*	date started:	***20 May 2022***
		date completed:	***20 May 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 292109; N: 6261303 (GDA2020 MGA) surface elevation: 27.92 m (AHD) angle from horizontal: 90°

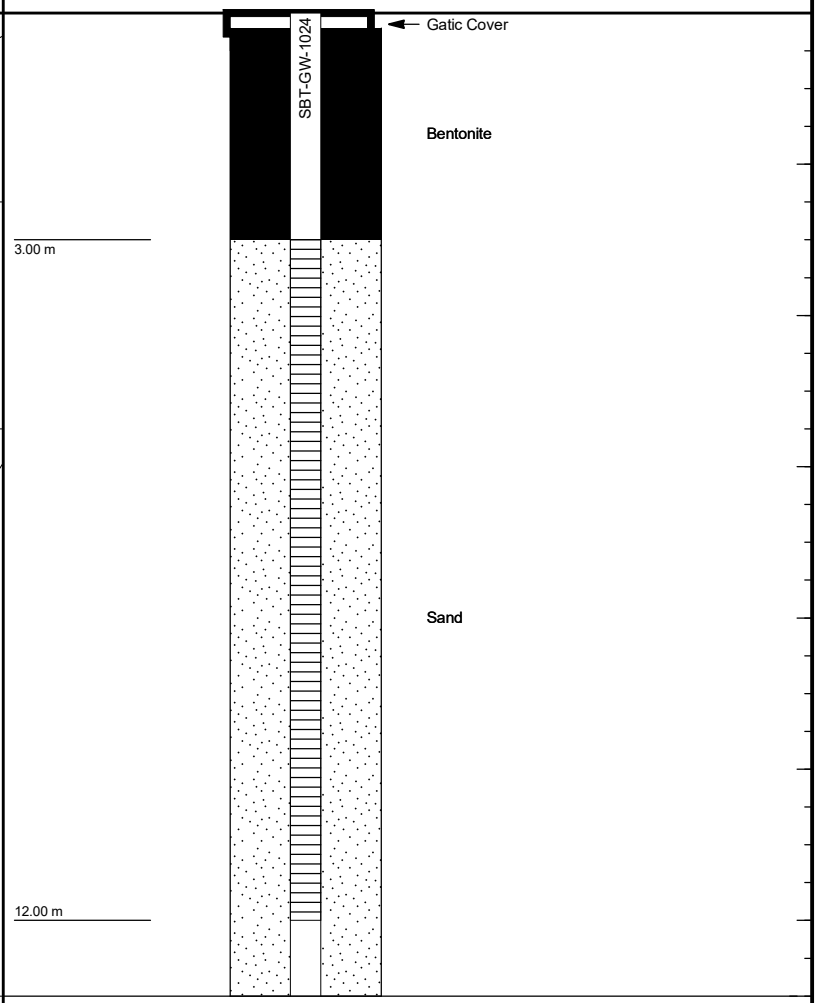
equipment type: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, N					**FILL**
					POSSIBLE ALLUVIUM
		26	1, 2		
					RESIDUAL SOIL
		24	3, 4		
			5		
		22	6		**EXTREMELY WEATHERED MATERIAL**
HQ					**BEDROCK**
		20	7, 8		
		18	9, 10		
		16	11, 12		
		14	13, 14		
		12	15		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

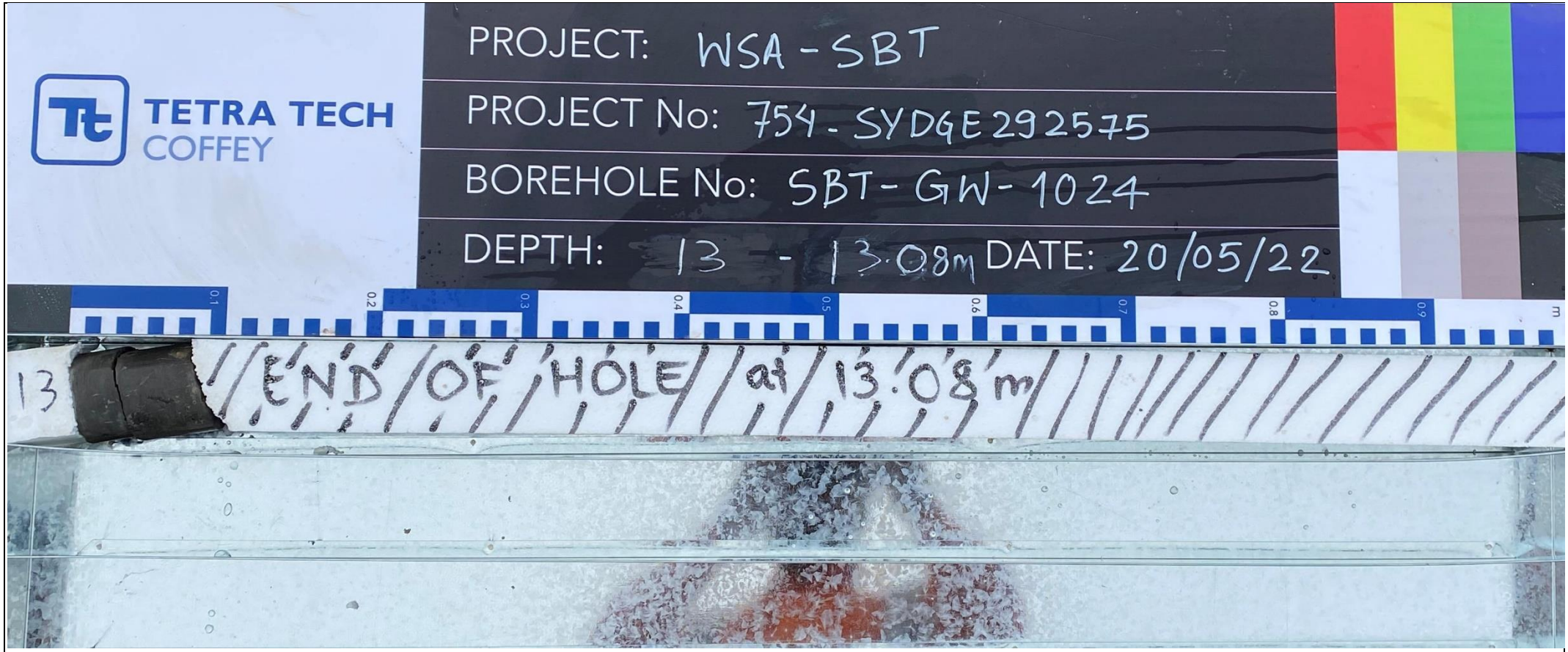
graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1024	Standpipe piezometer				13.00 m			14.92	

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY SBT-GW-1024.GPJ <<DrawingFile>> 25/11/2022 13:57

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-1024**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-1024**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-1024**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1037*
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Lot 44, Orchard Hills NSW*	date started:	*04 Aug 2022*
		date completed:	*04 Aug 2022*
		logged by:	*PD*
		checked by:	*DS*

position: E: 291758; N: 6259321 (GDA2020 MGA) surface elevation: 39.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, C							CL	**TOPSOIL: Silty CLAY**: low plasticity, dark grey, trace fine grained gravel and fine grained sand, with root fibres.	<Wp	VS		**TOPSOIL**
							CL-CI	**Silty CLAY**: low to medium plasticity, red-brown and grey, trace fine grained sand and fine gravel.	<Wp	S - F		**RESIDUAL SOIL**
				39			CI	**Silty CLAY**: medium plasticity, brown and grey, trace fine grained gravel. becoming pale grey				
					1.0							
				38			CI	**Silty CLAY**: medium plasticity, brown and grey with pale grey, fine grained sand and fine to medium grained gravel.				
					2.0							
		▶							~Wl			
				37								
					3.0							
				36								
					4.0			becoming grey-brown				
							CH	**Gravelly CLAY**: high plasticity, dark brown, grey and red, fine ot medium angular to rounded gravel. becoming dark grey	>Wp	VSt - H		
				35								
					5.0							
							CH	**Silty CLAY**: high plasticity, pale grey and brown, trace fine grained sand and fine gravel, rock fabric and texture visible, inferred as: Siltstone, extremely weathered, very low strength.		H		**EXTREMELY WEATHERED SILTSTONE**
				34								
W					6.0			**SILTSTONE**: dark grey.				**SILTSTONE**
				33								
					7.0							
				32								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-1037***
principal:	***Sydney Metro***	sheet:	2 of 2
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Lot 44, Orchard Hills NSW***	date started:	***04 Aug 2022***
		date completed:	***04 Aug 2022***
		logged by:	***PD***
		checked by:	***DS***

position: E: 291758; N: 6259321 (GDA2020 MGA) surface elevation: 39.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information							material substance							
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
W C				31				**SILTSTONE**: dark grey. *(continued)*				**SILTSTONE**
					9.0			Borehole SBT-GW-1037 terminated at 9.0 m				
				30	10.0							
				29	11.0							
				28	12.0							
				27	13.0							
				26	14.0							
				25	15.0							
				24								

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1037***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Lot 44, Orchard Hills NSW*	date started:	***04 Aug 2022***
		date completed:	***04 Aug 2022***
		logged by:	***PD***
		checked by:	***DS***

position: E: 291758; N: 6259321 (GDA2020 MGA) surface elevation: 39.72 m (AHD) angle from horizontal: 90°

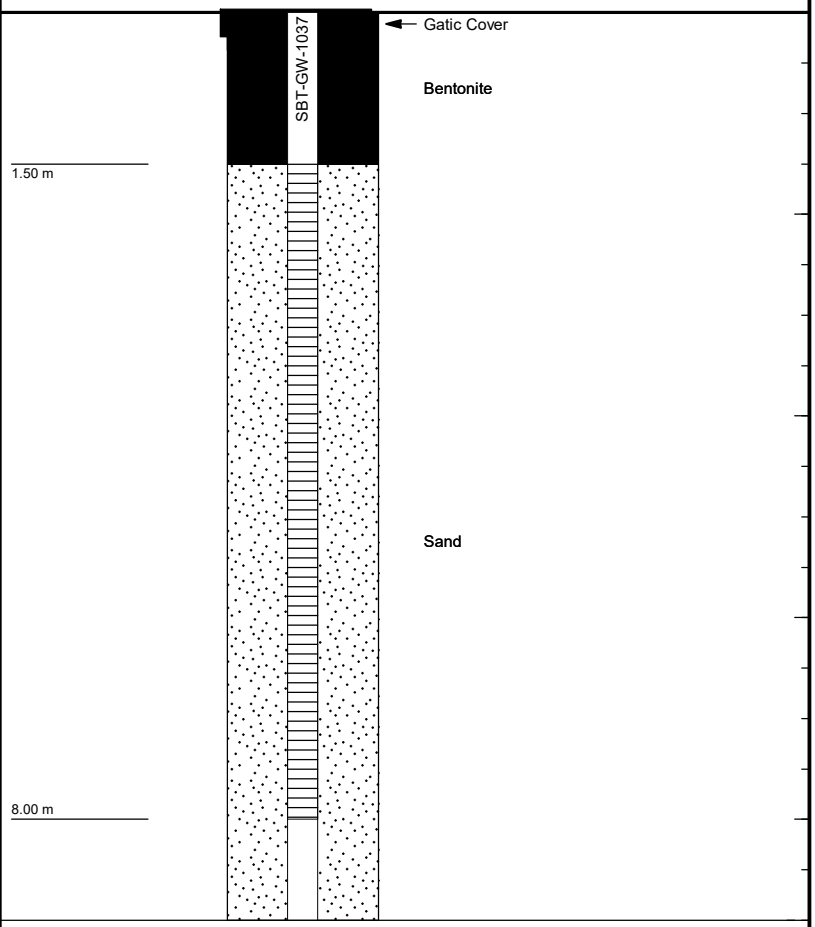
equipment type: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, C, W		38	1		**TOPSOIL**
					RESIDUAL SOIL
		36	2		
			3		
		34	4		
			5		**EXTREMELY WEATHERED SILTSTONE**
		32	6		**SILTSTONE**
		30	7		
		28	8		
			9		
			10		
			11		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1037	Standpipe piezometer				9.00 m			30.72	

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1042***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*98 Kent Road, Orchard Hills NSW (Private property)*	date started:	***17 Jun 2022***
		date completed:	***17 Jun 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 291875; N: 6259124 (GDA2020 MGA) surface elevation: 39.08 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T				39			CL	**TOPSOIL: Silty CLAY**: low plasticity, dark grey, trace fine grained sand, root fibres, grass and plastic pieces.	<Wp	S - F		**TOPSOIL**
								Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand, trace root fibres and fine to medium grained gravel.				**RESIDUAL**
			SPT 0, 7, 9, N*=16	38	1.0			1.0 m: becoming pale grey		S	HP 500 kPa HP 340 kPa HP 360 kPa	
							CL	**Silty CLAY**: medium plasticity, red-brown, trace fine grained sand and ironstone angular to rounded fine gravel.	>Wp			
			SPT 15, 17/120mm N*=R	37	2.0		GC	**CLAYEY GRAVEL**: red-brown and grey, angular to rounded ironstone gravel, clay is low plasticity, grey-brown with fine to medium grained sand.	M	D - VD	HP 270 kPa >P HP 400 kPa HP >600 kPa	
C				36	3.0		CH	**Silty CLAY**: high plasticity, red-brown and pale grey, trace fine grained sand and iron indurated round to angular fine grained gravel.	>Wp	St - VS	HP 10 kPa HP 400 kPa HP 460 kPa	
				35	4.0			4.0 m: becoming grey-brown 4.5 m: becoming dark grey				
				34	5.0		CL	**Silty CLAY**: low to medium plasticity, dark grey, brown and red, inferred as extremely weathered very low strength Siltstone, trace carbonaceous.	<Wp	VSt - H	>P HP 290 kPa >>	**EXTREMELY WEATHERED SILTSTONE**
W								Borehole SBT-GW-1042 continued as cored hole			HP >600 kPa HP >600 kPa	
				33	6.0							
				32	7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1042***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*98 Kent Road, Orchard Hills NSW (Private property)*	date started:	***17 Jun 2022***
		date completed:	***17 Jun 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 291875; N: 6259124 (GDA2020 MGA) surface elevation: 39.08 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		39									
		38	1.0								
		37	2.0								
		36	3.0								
		35	4.0								
		34	5.0								
					started coring at 5.68m						
W		33	6.0		**Silty CLAY**: medium to high plasticity, brown-grey, trace fine grained sand and fine ironstone gravel, rock texture evident (extremely weathered siltstone). **SILTSTONE**: dark grey and grey.	XW - HW MW					SM, Clay, 50 mm PT, 0 - 5°, PL, RO, Clay CO CS, 90 mm, fractured rock, iron indurated
		32	7.0			SW		d=0.21 a=0.12 d=0.02 a=0.13	89%		PT, 0 - 5°, PL, RO, CO PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 5°, PL, RO, CN PT, 0 - 5°, PL, RO, Clay CO

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1042***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*98 Kent Road, Orchard Hills NSW (Private property)*	date started:	***17 Jun 2022***
		date completed:	***17 Jun 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 291875; N: 6259124 (GDA2020 MGA) surface elevation: 39.08 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular	general
W		31			**INTERBEDDED: (80% SILTSTONE, 30% SANDSTONE)**: siltstone is dark grey, sandstone is fine grained, grey. 8.50 to 8.70 m: disturbed bedding	SW			89%		PT, 0 - 5°, PL, RO, CO, clay	
								d=0.11 a=0.21			PT, 0 - 5°, PL, RO, CN	
		30	9.0		**NO CORE:** 0.05 m Borehole SBT-GW-1042 terminated at 9.00 m							
		29	10.0									
		28	11.0									
		27	12.0									
		26	13.0									
		25	14.0									
		24	15.0									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1042***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*98 Kent Road, Orchard Hills NSW (Private property)*	date started:	***17 Jun 2022***
		date completed:	***17 Jun 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 291875; N: 6259124 (GDA2020 MGA) surface elevation: 39.08 m (AHD) angle from horizontal: 90°

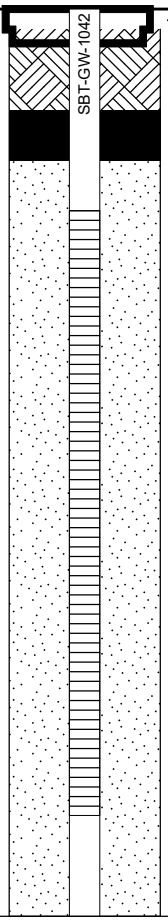
equipment type: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T		38	1		**TOPSOIL**
					RESIDUAL
			2		
		36	3		
C			4		
		34	5		
					EXTREMELY WEATHERED SILTSTONE
			6		**BEDROCK**
W		32	7		
			8		
		30	9		
			10		
		28	11		



Gatic Cover
Grout
Bentonite
Sand

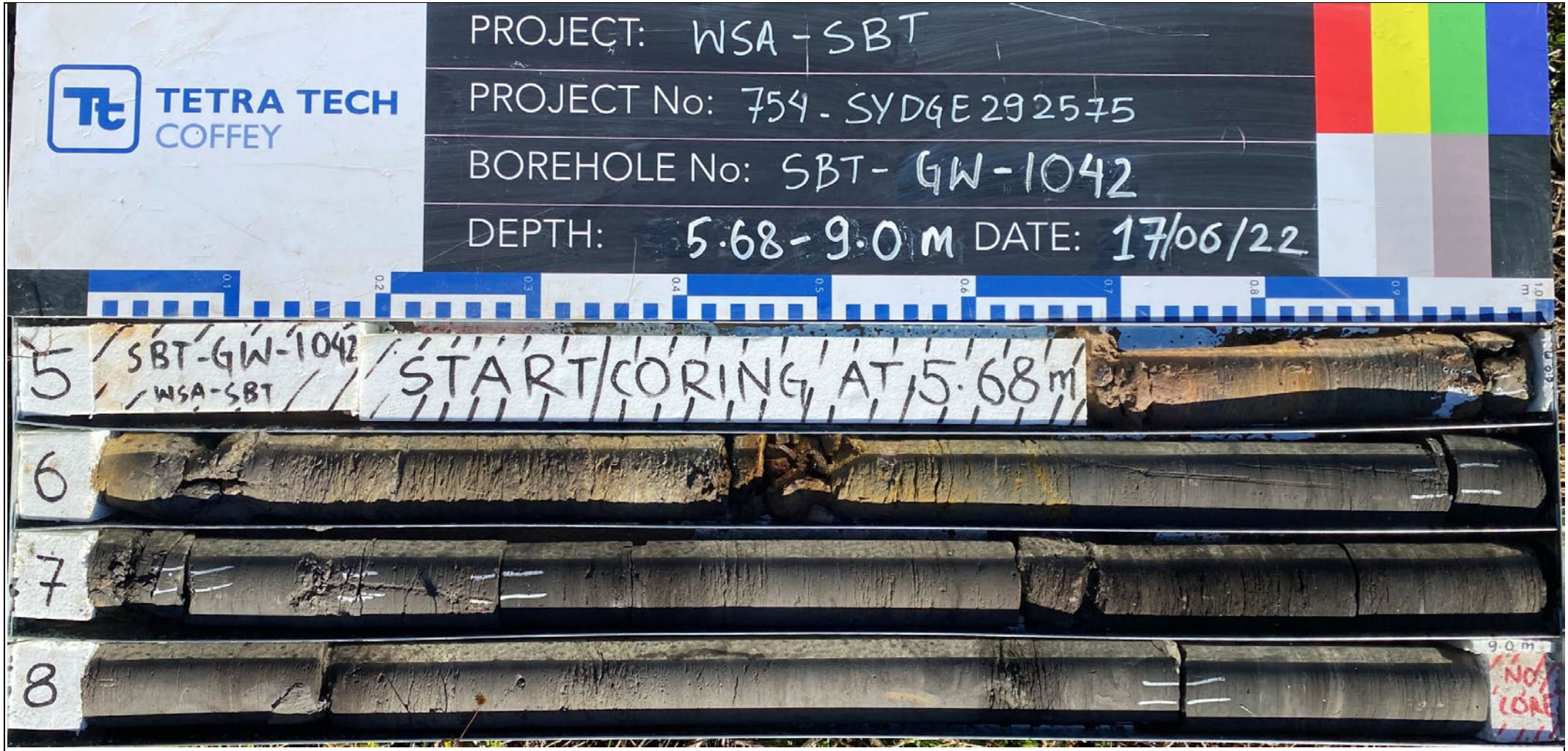
method & support
see engineering log for details

water
10-Oct-12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1042	Standpipe piezometer				9.00 m			30.08	

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY SBT-GW-1042.GPJ <<DrawingFile>> 25/11/2022 13:52



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date				
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-1042**
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1043***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Kent Road Orchard Hills (Private Property)*	date started:	***08 Aug 2022***
		date completed:	***08 Aug 2022***
		logged by:	***PD***
		checked by:	***DS***

position: E: 291876; N: 6259088 (GDA2020 MGA) surface elevation: 39.63 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T		Not Observed					CL	**TOPSOIL: Silty CLAY**: low plasticity, dark grey, trace fine grained sand and root fibres.	<Wp	VS		**TOPSOIL**
							CI	**Silty CLAY**: medium plasticity, red and brown, fine to medium iron indurated gravel.	>Wp	S		**RESIDUAL SOIL**
				39								
					1.0		CI	**Gravelly CLAY**: medium plasticity, red and brown, fine to medium iron indurated angular to rounded gravel. becoming pale grey	>Wp	VSt		
				38								HP 420 kPa
					2.0							
				37								HP 300 kPa
												HP 260 kPa
					3.0							HP 180 kPa
							CH	**Silty CLAY**: high plasticity, brown, grey and red, with iron indurated gravel and trace fine grained sand.		St - VSt		
				36								
C					4.0			becoming grey-brown				>>HP >600 kPa
												>>HP >600 kPa
				35				becoming dark grey				HP >600 kPa
W					5.0			**SILTSTONE**: dark grey and brown.				**BEDROCK**
				34								
					6.0							
				33								
					7.0							
				32								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1043***
principal:	*Sydney Metro*	sheet:	2 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Kent Road Orchard Hills (Private Property)*	date started:	***08 Aug 2022***
		date completed:	***08 Aug 2022***
		logged by:	***PD***
		checked by:	***DS***

position: E: 291876; N: 6259088 (GDA2020 MGA) surface elevation: 39.63 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information						material substance						
method & support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
W C		Not Observed		31				**SILTSTONE**: dark grey and brown. *(continued)*				**BEDROCK**
					9.0			Borehole SBT-GW-1043 terminated at 9.0 m				
				30								
					10.0							
				29								
					11.0							
				28								
					12.0							
				27								
					13.0							
				26								
					14.0							
				25								
					15.0							
				24								

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1043***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Kent Road Orchard Hills (Private Property)*	date started:	***08 Aug 2022***
		date completed:	***08 Aug 2022***
		logged by:	***PD***
		checked by:	

position: E: 291876; N: 6259088 (GDA2020 MGA) surface elevation: 39.63 m (AHD) angle from horizontal: 90°

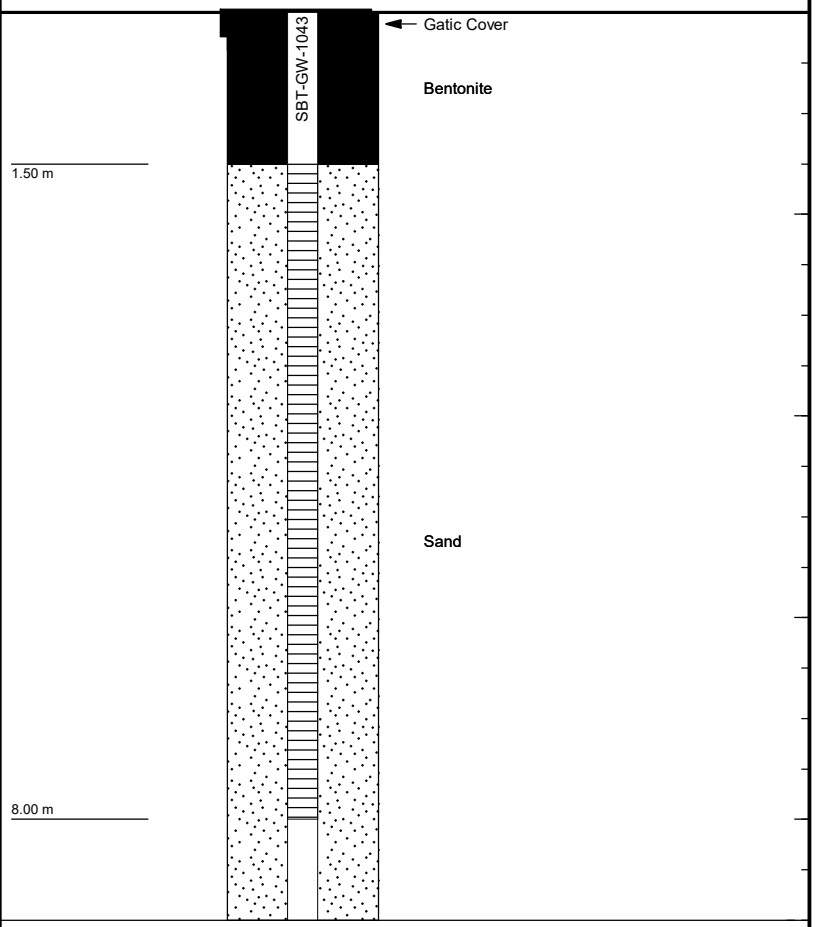
equipment type: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T		38	1		**TOPSOIL**
					RESIDUAL SOIL
			2		
		36	3		
C			4		
			5		**ROCK**
		34	6		
W			7		
		32	8		
			9		
		30	10		
			11		
		28			



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1043	Standpipe piezometer				9.00 m			30.63	

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1063***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*114 Samuel Marsden Road, Orchard Hills, NSW*	date started:	***29 Sep 2022***
		date completed:	***30 Sep 2022***
		logged by:	***JE/PD***
		checked by:	***VN***

position: E: 292193; N: 6258861 (GDA2020 MGA) surface elevation: 31.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS, C		Not Observed	E, E, E, SPT 3, 5, 7 N*=12, E, SPT 8, 13, 18 N*=31, E, SPT 19, 20/25mm HB N*=R	31, 30, 29, 28, 27, 26, 25, 24	1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0		CH-MH	**TOPSOIL: Clayey SILT**: fine grained, brown.	M - Wp	St		**TOPSOIL**
								Silty CLAY: high plasticity, pale grey, mottled red-brown.				**RESIDUAL SOIL**
										VSt		
								SILTSTONE: grey, extremely weathered, estimated very low to low strength.				**EXTREMELY WEATHERED SILTSTONE**
								Borehole SBT-GW-1063 continued as cored hole				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1063.GPJ <<DrawingFile>> 29/11/2022 11:04

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1063***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*114 Samuel Marsden Road, Orchard Hills, NSW*	date started:	***29 Sep 2022***
		date completed:	***30 Sep 2022***
		logged by:	***JE/PD***
		checked by:	***VN***

position: E: 292193; N: 6258861 (GDA2020 MGA) surface elevation: 31.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		31	1.0								
		30	2.0								
		29	3.0								
		28	4.0		started coring at 4.08m						
HQ	Not Observed	27	5.0		**SANDSTONE**: fine to medium grained, brown and grey, iron oxide stained.	HW			100%		
					NO CORE: 0.58 m				43%		
		26	6.0		**SANDSTONE**: fine grained, brown and grey, iron oxide stained.	HW			69%		CS, Clay, 100 mm
					SILTSTONE: pale brown, dark grey, distinctly bedded at 0-5°. 5.67 to 5.71 m: sandstone band, fine grained dark brown 6.00 m: becoming dark grey band, with 5% sandstone laminations	MW		d=0.13 a=0.47 d=0.47 a=0.23			PT, 10°, PL, RO, CN PT, 0°, PL, RO, Clay CO PT, 0 - 15°, IR, RO, Clay CO PT, 0°, PL, RO, Clay CO JT, 85°, UN, RO, Fe SN, 490 mm
		25	7.0			SW					PT, 5°, PL, RO, Fe SN
		24			**INTERLAMINATED SANDSTONE (80%) AND SILTSTONE (20%)**: sandstone is fine grained and pale grey, siltstone is dark grey, distinctly laminated at 0-5°.				100%		SM, Clay, 20 mm
					SILTSTONE: dark grey, grey, with 10% fine sandstone laminations, distinctly bedded at 0-5°.	FR		d=0.66			

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1063***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*114 Samuel Marsden Road, Orchard Hills, NSW*	date started:	***29 Sep 2022***
		date completed:	***30 Sep 2022***
		logged by:	***JE/PD***
		checked by:	***VN***

position: E: 292193; N: 6258861 (GDA2020 MGA) surface elevation: 31.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed				**SILTSTONE**: dark grey, grey, with 10% fine sandstone laminations, distinctly bedded at 0-5°. *(continued)* 8.10 to 8.30 m: with 15% fine grained sandstone lamination, distinctly cross-bedded at 5-20°	FR		a=0.49	100%		
		23	9.0					d=0.32 a=1.32			
		22	10.0		9.60 to 11.00 m: becoming grey with 10% fine grained sandstone			d=1.22 a=0.73 d=1.82 a=3.38	93%		
		21									
			11.0		**NO CORE:** 0.10 m						
					SILTSTONE: dark grey, grey, with 10% fine sandstone laminations, distinctly bedded at 0-5°. 11.00 to 11.68 m: dark grey	FR			100%		
		20			**SILTSTONE**: grey, with 10% sandstone laminations, indistinctly laminated.			d=3.00 a=3.61			PT, 5 - 10°, UN, RO, CA CO PT, 0 - 5°, X CO, tight
			12.0		Borehole SBT-GW-1063 terminated at 12.00 m						
		19	13.0								
		18	14.0								
		17	15.0								
		16									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1063.GPJ <<DrawingFile>> 29/11/2022 11:03

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1063**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1063**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-A***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:		date started:	***10 Aug 2022***
		date completed:	***11 Aug 2022***
		logged by:	***JE***
		checked by:	

position: E: 290426; N: 6248381 (GDA2020 MGA) surface elevation: 67.80 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: N/A hole diameter : 120 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa)	soil origin, structure and additional observations
SS		Not Encountered		67 66 65 64 63 62	1.0 2.0 3.0 4.0 5.0 6.0			**FILL: CLAY**: high plasticity, mixture of clay, medium grained sand, shale, sandstone gravel and cobbles..				**FILL** appears to be well compacted.
							CH	**Silty CLAY**: high plasticity, red-brown grading to grey mottled red-brown.				**RESIDUAL SOIL**
				61 60	7.0			Borehole SBT-GW-3003-A terminated at 6.3 m Target depth				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-B***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Drive*	date started:	***10 Aug 2022***
		date completed:	***11 Aug 2022***
		logged by:	***JE***
		checked by:	

position: E: 290425; N: 6248382 (GDA2020 MGA) surface elevation: 67.55 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: N/A hole diameter : 120 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS				67 66 65 64 63 62 61 60	1.0 2.0 3.0 4.0 5.0 6.0 7.0			**FILL: CLAY**: high plasticity, mixture of clay, silt, gravel and rock.				**FILL** appears to be well compacted.
							CH	**Silty CLAY**: high plasticity, red-brown grading to grey mottled red-brown.				**RESIDUAL SOIL**
								SHALE: grey to dark grey, extremely weathered, estimated very low to low strength.				**EXTREMELY WEATHERED SHALE**

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-3003-B***
principal:	***Sydney Metro***	sheet:	2 of 2
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Airport Drive***	date started:	***10 Aug 2022***
		date completed:	***11 Aug 2022***
		logged by:	***JE***
		checked by:	

position: E: 290425; N: 6248382 (GDA2020 MGA) surface elevation: 67.55 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: N/A hole diameter : 120 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
SS				59 58 57 56 55 54	9.0 10.0 11.0 12.0 13.0 14.0			**SHALE**: grey to dark grey, extremely weathered, estimated very low to low strength. *(continued)*				**EXTREMELY WEATHERED SHALE**
				53 52	15.0			Borehole SBT-GW-3003-B terminated at 14.5 m Target depth				

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-3003-B.GPJ <<DrawingFile>> 27/10/2022 10:21

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-C***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Business Park*	date started:	***08 Aug 2022***
		date completed:	***10 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 290423; N: 6248384 (GDA2020 MGA) surface elevation: 67.38 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB-8, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS, C		Not Observed		67			CH	**FILL: Silty CLAY**: high plasticity, red-brown, grey-brown, with shale fragments.	M			**FILL**
			SPT 7, 10, 12 N=22	66	1.0				D - M			
			SPT 7, 10, 11 N=21	65	2.0							
			SPT 7, 16, 21 N=37	64	3.0							
			SPT 8, 31, 14 N=45	63	4.0			4.3 m: SANDSTONE cobble in SPT				
			SPT 3, 5, 12 N=17	62	5.0		CH	**Silty CLAY**: high plasticity, grey mottled orange-brown.	M	VSt	HP 250 kPa HP 320 kPa	**RESIDUAL SOIL**
			SPT 7, 21, 21 N=42	61	6.0					H	HP >400 kPa	
			SPT 8, 18, 16/60mm HB N=R	60	7.0			**SILTSTONE**: grey with orange-brown bands, extremely whethered, estimated very low to low strength..				**EXTREMELY WEATHERED SILTSTONE**
								Borehole SBT-GW-3003-C continued as cored hole				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-3003-C.GPJ <<DrawingFile>> 23/11/2022 12:02

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-C***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Business Park*	date started:	***08 Aug 2022***
		date completed:	***10 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 290423; N: 6248384 (GDA2020 MGA) surface elevation: 67.38 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB-8, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		67									
			1.0								
		66									
			2.0								
		65									
			3.0								
		64									
			4.0								
		63									
			5.0								
		62									
			6.0								
		61									
			7.0		started coring at 7.26m						
HQ	Not Observed	60			**SILTSTONE**: grey with orange-brown bands.	HW MW	OK	d=0.05 a=0.09	80% 100%		PT, 10°, PL, SO, Clay VN, 1 mm

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-3003-C.GPJ <<DrawingFile>> 23/11/2022 12:02

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-C***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Business Park*	date started:	***08 Aug 2022***
		date completed:	***10 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 290423; N: 6248384 (GDA2020 MGA) surface elevation: 67.38 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB-8, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	59		**SANDSTONE**: fine to medium grained, grey, with discontinuous siltstone/carbonaceous laminations, distinctly laminated at 0-5°.	SW		d=0.07 a=0.02	100%		PT, 5°, PL, SO, Clay VN, <=1 mm, carbonaceous veneer
				SILTSTONE: dark grey, with carbonaceous bands.						
			9.0				d=0.09 a=0.16			
		58						100%		PT, 0°, PL, RO, CN
			10.0				d=0.04 a=0.19			
		57								
			11.0					100%		
		56		11.30 to 11.34 m: sandy band			d=0.02 a=0.12			PT, 5°, PL, SO, CN; PT, 5°, PL, SO, CN
			12.0							
		55								
			13.0				d=0.10 a=0.21	100%		
		54								Vein, 5°, UN, SO, 4 mm, siderite
							d=0.02 a=0.12			SM, 5°, PL, SO, Clay, 40 mm
			14.0	**SANDSTONE**: fine to medium grained, grey, with discontinuous dark grey siltstone/carbonaceous laminations. From 14.55 m: becoming distinctly laminated at 0-10°.	FR		d=2.19 a=1.42			PT, 5°, PL, SO, VN, <=1 mm, carbonaceous veneer
		53						100%		
			15.0	**SILTSTONE**: dark grey.						
		52		15.27 to 15.29 m: sideritic band			d=0.07 a=0.31	100%		PT, 5°, PL, SO, CN

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method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-3003-C*
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Airport Business Park*	date started:	*08 Aug 2022*
		date completed:	*10 Aug 2022*
		logged by:	*JE*
		checked by:	*VN*

position: E: 290423; N: 6248384 (GDA2020 MGA) surface elevation: 67.38 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB-8, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	51		**SILTSTONE**: dark grey. *(continued)*	FR					PT, 5°, PL, SO, CN
			17.0	**SANDSTONE**: fine to medium grained, grey, with discontinuous dark grey siltstone/carbonaceous laminations, distinctly laminated at 0-5°.			d=0.31 a=0.32	100%		JT, 30°, PL, SO, CN
		50					d=0.50 a=0.66			Vein, 5°, PL, SO, CA, 2 mm; PT, 5°, PL, SO, Clay VN, <=1 mm
			18.0	**SILTSTONE**: dark grey.						PT, 5°, PL, SO, CN; SM, 5°, PL, SO, Clay, 30 mm; PT, 5°, PL, SO, CN
		49			HW		d=0.04 a=0.23			
			19.0	**SANDSTONE**: fine to medium grained, grey, with discontinuous dark grey siltstone/carbonaceous laminations.	FR					
		48		**SILTSTONE**: grey with dark grey bands.				100%		
			20.0				d=0.19 a=0.33; d=0.04 a=0.30			PT, 10°, PL, SO, Clay filled, 4 mm; PT, 5°, UN, SO, Clay filled, 4 mm; PT, 5°, UN, SO, Clay CO, <=2 mm
		47								
			21.0	**SANDSTONE**: fine to medium grained, grey, pale grey, with 10% siltstone laminations.						JT, 85°, UN, SO, CA CO, <=2 mm
		46		From 21.2 m: becoming distinctly laminated at 0-5°.						
			22.0	**SILTSTONE**: dark grey, with 10-15% sandstone laminations, fine to medium grained, grey, distinctly laminated at 0-5°.			d=0.08 a=0.22 d=0.35 a=0.23	89%		
		45								PT, 5°, PL, SO, Coal, <=3 mm
			23.0							SM, 5°, PL, SO, Clay, 20 mm; PT, 5°, PL, SO, CN, 20 mm
		44								
				Borehole SBT-GW-3003-C terminated at 23.50 m Target depth						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-3003-C.GPJ <<DrawingFile>> 23/11/2022 12:02

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			project:	**WSA SBT**
date	**28/10/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-3003-C**
size	**A4**		project no: **754-SYDGE292575**	Photograph: **1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			project:	**WSA SBT**
date	**28/10/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-3003-C**
size	**A4**		project no: **754-SYDGE292575**	Photograph: **2**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T; C		Not Observed	J+P+Z					**FILL: SILT**: low liquid limit, grey, trace medium grained, angular, dark grey sandstone gravels.	>Wl			**FILL**
			J+P+Z					**FILL: CLAY**: medium plasticity, orange-brown, trace fine to medium, orange-brown ironstone gravel.	~Wp			PID: 4 ppm 0.0-0.2m, T-114174
								0.8 m: orange-brown mottled page grey				PID: 4.1 ppm 0.4-0.5m
			J+P+Z	83	1.0							
			J+P+Z SPT 2, 6, 11 N*=17						<Wp			PID: 4.2 ppm 0.9-1.0m
												PID: 5.1 ppm 1.0-1.45m
				82	2.0							
			J+P+Z SPT 11, 16, 17 N*=33									
												PID: 7.2 ppm 2.0-2.45m
				81	3.0							
			J+P+Z SPT 5, 13, 13 N*=26				CH	**CLAY**: high plasticity, orange-brown mottled pale grey.	~Wp	VSt	X	**RESIDUAL SOIL**
												HP 450 kPa HP 460 kPa HP 440 kPa PID: 6.7 ppm 3.0-3.45m
				80	4.0							
			J+P+Z SPT 6, 14, 25 N*=39					**CLAY**: high plasticity, orange-brown and red-brown mottled pale grey.	D	H	>>X	
											>>X	HP >600 kPa HP >600 kPa HP >600 kPa HP >600 kPa HP >600 kPa HP >600 kPa PID: 6.9 ppm 4.0-4.45m
								Borehole SBT-GW-3012-C continued as cored hole				
				79	5.0							
				78	6.0							
				77	7.0							
				76								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-3012-C.GPJ <<DrawingFile>> 23/11/2022 12:47

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	2 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		83	1.0								
		82	2.0								
		81	3.0								
		80	4.0		started coring at 4.45m						
HQ	Not Observed	79	5.0		**CLAY**: high plasticity, pale grey mottled red-brown, with 15% ironstone bands up to 20mm.	RS			0%		
		78	6.0		**SILTSTONE**: pale grey and orange brown, indistinctly laminated at 0°.	HW					JT, 90°, PL, RO, SN
					CLAY: high plasticity, pale grey mottled red-brown, with 15% ironstone bands up to 20mm.				60%		
		77	7.0		**SILTSTONE**: pale grey and orange brown, indistinctly laminated at 0°, with iron staining.	HW					SM, Clay, 80 mm SM, Clay, 30 mm
						MW	O X	d=0.21 a=0.65	20%		SM, Clay, 150 mm
		76									

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-3012-C.GPJ <<DrawingFile>> 23/11/2022 12:50

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	3 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	75	9.0	**SILTSTONE**: pale grey and orange brown, indistinctly laminated at 0°, with iron staining. *(continued)*	MW			20%		JT, 70°, PL, RO, Fe SN; SM, Clay, 100 mm; JT, 80°, PL, RO, VN; JT, 80°, PL, RO, VN; JT, 70°, PL, RO, Fe SN; SM, Clay, 10 mm; SM, Clay, 10 mm; SM, Clay, 10 mm; JT, 50°, PL, RO, SN; JT, 40°, PL, RO, SN; JT, 30°, PL, RO, SN; JT, 70°, PL, RO, Fe SN
		74	10.0	**SANDSTONE**: fine grained, pale grey-brown, indistinctly laminated.			d=0.35 a=0.37			
				SILTSTONE: dark grey, indistinctly laminated at 0-5°, with 5% sandstone laminations.	SW - FR		d=0.03 a=0.29	98%		SM, Clay, 40 mm; SM, Clay, 10 mm
		73	11.0	**NO CORE:** 0.16 m						
				SILTSTONE: dark grey, indistinctly laminated at 0-5°, with 5% sandstone laminations.	SW - FR		d=0.18 a=0.35			
		72	12.0	**SANDSTONE**: fine grained, grey, with 10% siltstone laminations, indistinctly laminated betwee 0-5°.			d=0.21 a=0.65			PT, 0°, PL, RO, CN; PT, 0°, PL, RO, CN
		71	13.0	**SILTSTONE**: dark grey, with 5-10% sandstone laminations, distinctly laminated at 0°.			d=0.06 a=0.49	100%		JT, 90°, PL, RO, CN; JT, 90°, PL, RO, CN; JT, 60°, PL, RO, CN
		70	14.0	**SANDSTONE**: fine grained, indistinctly laminated at 0-5° with 5% siltstone.			d=4.09 a=6.85	100%		JT, 60°, PL, VR, Fe SN
		69	15.0	**SILTSTONE**: dark grey, distinctly laminated at 0-5°.			d=0.12 a=0.29	99%		SM, Clay, 10 mm
		68		15.80 to 16.25 m: grey						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	4 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed			**SILTSTONE**: dark grey, distinctly laminated at 0-5°. *(continued)*	SW - FR		d=0.04 a=0.18	99%		
		67	17.0	**INTERLAMINATED SANDSTONE (60%) AND SILTSTONE (40%)**: sandstone is fine, pale grey and siltstone is fine, dark grey, indistinctly laminated at 0-30°.						
				SILTSTONE: dark grey, indistinctly laminated at 0-5°.			d=0.12 a=0.74			
		66	18.0	**SANDSTONE**: fine grained, grey, indistinctly laminated at 0-5°; with 10-15% dark grey siltstone laminations.	FR		d=0.05 a=0.40			
		65	19.0				d=0.62 a=0.58	98%		
		64	20.0	19.80 m: becoming medium to coarse grained 20.12 m: becoming pale grey			d=1.02 a=1.10			JT, 85°, UN, VR, SN PT, 0 - 10°, CU, RO, CA, 2 mm, White Calcite, 0-20° JT, 70°, PL, SL, CN, 2x intersecting joints
		63	21.0	**SILTSTONE**: dark grey, indistinctly laminated at 0-5°; with 10% sandstone laminations. 20.80 to 21.20 m: with 5% MUDSTONE clasts 21.20 to 21.25 m: grey 21.30 to 21.60 m: grey			d=0.10 a=0.52 d=0.06 a=0.35			
		62	22.0				d=0.22 a=0.42	100%		JT, 10 - 45°, CU, RO, CN
		61	23.0	23.17 to 23.33 m: grey grading into dark grey						PT, 90°, PL, RO, CN PT, 0°, PL, CA, 5 mm, White Calcite, closed
		60		**INTERLAMINATED SILTSTONE (60%) AND SANDSTONE (40%)**: siltstone is dark grey, indistinctly laminated at 0-5° with 5% sandstone;						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	5 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	59	25.0		sandstone is fine, grey, indistinctly laminated at 0-5° with 5% siltstone. **SILTSTONE**: dark grey, indistinctly laminated at 0-5%, with 5% sandstone laminations and 5% rounded mudstone clasts up to 10mm. *(continued)*	FR	O X	d=0.12 a=0.39	100%		
							O X	d=0.07 a=0.47			PT, 0°, PL, RO, CN SM, 20 mm, Silty Clay
		58	26.0		**SANDSTONE**: fine grained, grey, indistinctly laminated. **SILTSTONE**: dark grey, indistinctly laminated at 0-5%, with 5% sandstone laminations and 5% rounded mudstone clasts up to 10mm.				100%		
							O X	d=0.07 a=0.18			
		57	27.0								
		56	28.0		Borehole SBT-GW-3012-C terminated at 27.20 m Target depth						
		55	29.0								
		54	30.0								
		53	31.0								
		52									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

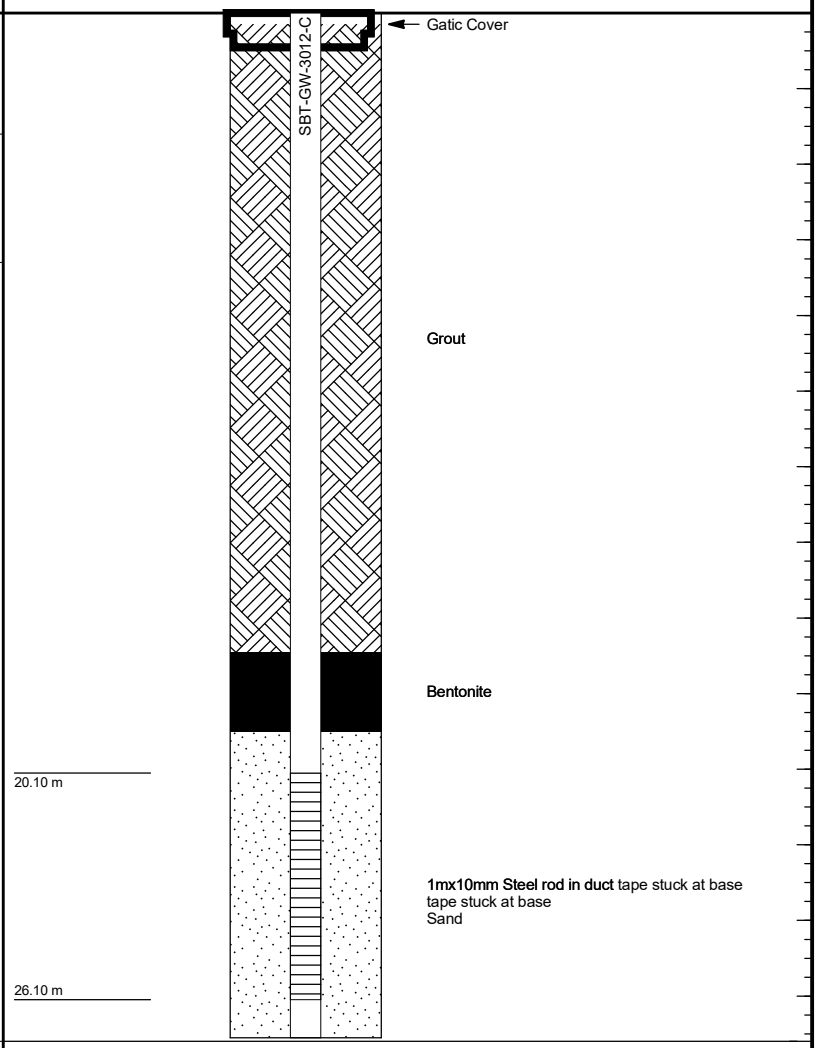
equipment type: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company: Rockwell
driller: PS
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, C	Not Observed				**FILL**
		80	4		**RESIDUAL SOIL**
					BEDROCK
		76	8		
		72	12		
HQ, N		68	16		
		64	20		
		60	24		
		56	28		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-3012-c	standpipe				27.10 m			56.86	

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drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 4**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 6**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4002***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Rd, Bringelly*	date started:	***21 Jun 2022***
		date completed:	***21 Jun 2022***
		logged by:	***PK***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hydropower Scout V, Truck mounted | drilling fluid: | hole diameter :

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD / C		Not Encountered	Z+J+P				CI-CH	**FILL: SANDY CLAY**: medium to high plasticity, dark brown, fine to medium grained sand, trace silt and fine grained, sub-rounded gravels, with rootlets.	~Wp - >Wp	St - VSt		**FILL:TOPSOIL**
			Z+J+P				CI	**CLAY**: medium plasticity, orange, brown with grey mottling, trace fine grained sand and silt.	~Wp			**RESIDUAL SOIL?**
			SPT 7, 9, 13 N=22		1.0			colour change to grey to pale grey with orange brown mottling inclusion of a root (##)		VSt - H	>>X >>X HP 590 kPa >>X HP >600 kPa HP >600 kPa	
								colour change to pale brown to red brown	~Wp - <Wp			
			SPT 19, 20/70mm N=R		2.0			colour changes to pale brown to brown with grey mottling			>>X >>X HP >600 kPa	**EXTREMELY WEATHERED MATERIAL** HP >600 kPa
								Borehole SBT-GW-4002 continued as cored hole				
					3.0							
					4.0							
					5.0							
					6.0							
					7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4002***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Rd, Bringelly*	date started:	***21 Jun 2022***
		date completed:	***21 Jun 2022***
		logged by:	***PK***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hydropower Scout V, Truck mounted | drilling fluid: | hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
			1.0								
			2.0		started coring at 2.40m						
HQ	Not Encountered		3.0		**SILTSTONE**: pale brown to brown, grey mottling, indistinctly laminated at 0-5°.	HW			49%		PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 0 - 5°, ST, RO, CN JT, 5 - 10°, UN, RO, CN PT, 0 - 5°, PL, RO, CN JT, 80 - 90°, UN, RO, CN JT, 0 - 5°, ST, RO, CN HB Drilling Break Drilling Break JT, 80 - 90°, ST, RO, Clay SN JT, 80 - 90°, ST, RO, Clay SN JT, 90°, UN, RO, CN JT, 80 - 90°, UN, RO, CN PT, 0 - 5°, PL, RO, CN JT, 80 - 90°, UN, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 70 - 80°, UN, RO, CN JT, 70 - 80°, UN, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 0 - 5°, UN, RO, Clay CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 70 - 80°, UN, RO, CN
			4.0		**INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%)**: fine to medium grained, pale brown to pale grey sandstone. grey to dark grey siltstone. distinctly laminated at 0-5°.	MW			78%		
			5.0		colour changes to pale grey to grey sandstone and dark grey siltstone laminations						
			6.0								Drilling Break
					50mm band of brown clay						PT, 0 - 5°, PL, RO, CN JT, 80 - 90°, UN, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
			7.0		**INTERLAMINATED SANDSTONE (80-90%) AND SILTSTONE (10-20%)**: fine to medium grained, pale grey to grey sandstone. dark grey siltstone. Distinctly laminated at 0-5°.	MW			93%		PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4002***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Rd, Bringelly*	date started:	***21 Jun 2022***
		date completed:	***21 Jun 2022***
		logged by:	***PK***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hydropower Scout V, Truck mounted | drilling fluid: | hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Encountered				**INTERLAMINATED SANDSTONE (80-90%) AND SILTSTONE (10-20%)**: fine to medium grained, pale grey to grey sandstone. dark grey siltstone. Distinctly laminated at 0-5°. *(continued)*	MW			93%		HB PT, 0 - 5°, PL, RO, CN
					rip up clast, medium rouned gravel 50% siltstone and 50% sandstone						PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
			9.0								Drilling Break PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
					INTERLAMINATED SILTSTONE (50%) AND SANDSTONE (50%): dark grey siltstone. fine to medium grained, pale grey to grey sandstone. Distinctly laminated at 0-5°.						PT, 0 - 5°, PL, RO, CN
			10.0		**SILTSTONE**: grey to dark grey, indistinctly laminated at 0-5°.	HW - MW			70%		PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 70 - 80°, UN, RO, CN PT, 0 - 5°, PL, RO, CN
						MW					
			11.0			HW - MW					PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
			12.0			MW			96%		Drilling Break PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
					rip up clast, medium rouned gravel						JT, 0 - 5°, UN, RO, CN Drilling Break JT, 0 - 5°, UN, RO, CN
			13.0								CS, Siltstone - Gravel
			14.0								JT, 5 - 10°, UN, RO, CN
					Borehole SBT-GW-4002 terminated at 14.07 m Target depth						
			15.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-4002***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Rd, Bringelly*	date started:	***21 Jun 2022***
		date completed:	***21 Jun 2022***
		logged by:	***PK***
		checked by:	

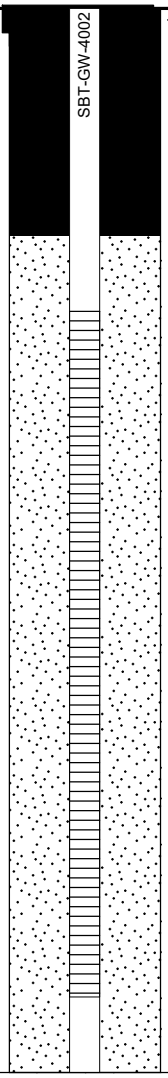
position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

equipment type: Hydropower Scout V, Truck mounted | drilling fluid: | hole diameter :

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover | bore construction license:
pvc type: | drilling company:
sand type: | driller:
grout type: | driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD, C	Not Encountered				**FILL:TOPSOIL**
					RESIDUAL SOIL?
			1		
			2		**EXTREMELY WEATHERED MATERIAL**
HQ, N			3		
			4		
			5		
			6		
			7		
			8		
			9		
			10		
			11		
			12		
			13		
			14		
			15		



Gatic Cover
Bentonite
Bentonite
Sand

method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-4002	Standpipe piezometer				14.07 m				

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4003***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road Bringelly*	date started:	***22 Jun 2022***
		date completed:	***23 Jun 2022***
		logged by:	***PK***
		checked by:	***VN***

position: E: 289573; N: 6245851 (GDA2020 MGA) surface elevation: 70.93 m (AHD) angle from horizontal: 90°

drill model: Hydrapower Scout, Track mounted drilling fluid: Water hole diameter :

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD, N		Not Observed					CI-CH	**TOPSOIL: Sandy CLAY**: medium to high plasticity, dark brown, fine to medium grained sand with rootlets.	>Wp			**FILL / TOPSOIL**
			E, D				CI	**CLAY**: medium plasticity, orange-brown mottled grey, trace fine grained sand.	<Wp	St		**RESIDUAL**
			SPT 4, 5, 7 N*=12	70	1.0						HP 450 kPa; >HP 420 kPa; HP 520 kPa	
			SPT 8, 12, 21 N*=33	69	2.0					VSt - H	>>HP >600 kPa	
								Borehole SBT-GW-4003 continued as cored hole			>>HP >600 kPa	**EXTREMELY WEATHERED SILTSTONE** HP >600 kPa; HP >600 kPa
				68	3.0							
				67	4.0							
				66	5.0							
				65	6.0							
				64	7.0							
				63								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4003***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road Bringelly*	date started:	***22 Jun 2022***
		date completed:	***23 Jun 2022***
		logged by:	***PK***
		checked by:	***VN***

position: E: 289573; N: 6245851 (GDA2020 MGA) surface elevation: 70.93 m (AHD) angle from horizontal: 90°

drill model: Hydrapower Scout, Track mounted drilling fluid: Water hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		70	1.0							
		69	2.0	started coring at 2.40m						
HQ	Not Observed	68	3.0	**Silty CLAY (CH)**: high plasticity, pale grey with red-brown bands, with ironstone bands up to 50 mm thick (extremely weathered siltstone).	RS		d=0.07 a=0.03	100%		HP >600 kPa
				3.50 to 3.60 m: very low strength siltstone band			d=0.02 a=0.01	100%		
		67	4.0	**NO CORE:** 0.11 m						
				SILTSTONE: pale brown to brown, with sandstone beds up to 50 mm thick, distinctly laminated.	XW - HW					
					HW - MW					PT, 0 - 5°, UN, RO, CN
		66	5.0				d=0.21 a=0.31	96%		SM, Clay, 10 mm; SM, Clay, 40 mm
				SILTSTONE: dark grey, with 5% sandstone laminations, distinctly laminated.	SW					PT, 0 - 5°, PL, RO, Clay CO; PT, 5°, PL, RO, Clay CO
					FR		d=0.15 a=0.46			
		65	6.0							PT, 0°, PL, RO, Clay CO, 5 mm
		64	7.0	**INTERLAMINATED SANDSTONE (80%) AND SILTSTONE (20%)**: sandstone is fine to medium grained, siltstone dark grey, distinctly laminated between 0-5°.			d=0.28 a=0.51	100%		PT, 0°, PL, RO, CN
							d=0.16 a=2.08			
		63								PT, 0°, PL, RO, Clay CO

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-4003.GPJ <<DrawingFile>> 23/11/2022 15:17

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4003***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road Bringelly*	date started:	***22 Jun 2022***
		date completed:	***23 Jun 2022***
		logged by:	***PK***
		checked by:	***VN***

position: E: 289573; N: 6245851 (GDA2020 MGA) surface elevation: 70.93 m (AHD) angle from horizontal: 90°

drill model: Hydrapower Scout, Track mounted drilling fluid: Water hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	62	9.0	**SANDSTONE**: fine grained, pale grey, with 10% siltstone laminations, distinctly bedded between 0-5°.	FR		d=1.51 a=0.82	100%		PT, 0°, PL, RO, CN; PT, 0°, PL, RO, Clay CO; JT, 0 - 5°, UN, RO, CN; PT, 0°, PL, RO, CN
		61	10.0	**INTERBEDDED SANDSTONE (50%) AND SILTSTONE (50%)**: siltstone is dark grey with occasional sandstone laminations, sandstone is fine grained, grey to pale grey, with occasional siltstone laminations, beds are up to 300 mm thick.			d=0.10 a=0.45	89%		PT, 15°, UN, RO, CN
		60	11.0	11.30 to 11.45 m: interlaminated siltstone and sandstone band 150 mm thick			d=0.06 a=0.30; d=0.03 a=0.33			SM, Clay, 30 mm; PT, 0°, PL, RO, CN
		59	12.0	**INTERBEDDED SILTSTONE (60%) AND SANDSTONE (40%)**: siltstone is dark grey, sandstone is fine grained, grey to pale grey, beds are up to 100 mm thick.						PT, 0 - 5°, PL, RO, Clay CO; JT, 0 - 5°, UN, RO, CN; SM, Clay, 30 mm; PT, 10°, PL, RO, CN; JT, 60 - 70°, UN, tight fractured rock; JT, 20°, UN, RO, Clay CO; PT, 0 - 5°, PL, RO, CN
		58	13.0	**SILTSTONE**: dark grey, with 5% sandstone laminations.			d=0.03 a=0.25 d=0.18 a=0.48	82%		PT, 0 - 5°, PL, RO, CN; PT, 0 - 5°, PL, RO, CN; SM, Clay, 30 mm; PT, 0 - 5°, PL, RO, CN; SM, 40 mm, fractured rock with clay; PT, 0 - 5°, PL, RO, CN; PT, 0 - 5°, PL, RO, CN
		57	14.0	**SILTSTONE**: dark grey, with occasional sandstone bands up to 50 mm thick and carbonaceous laminations.			d=0.02 a=0.38			PT, 0 - 5°, UN, RO, CN
		56	15.0	**SILTSTONE**: dark grey, with occasional sandstone bands up to 50 mm thick, trace mudstone clasts up to 20 mm in diameter.			d=0.01 a=0.40	95%		
		55								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4003***
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road Bringelly*	date started:	***22 Jun 2022***
		date completed:	***23 Jun 2022***
		logged by:	***PK***
		checked by:	***VN***

position: E: 289573; N: 6245851 (GDA2020 MGA) surface elevation: 70.93 m (AHD) angle from horizontal: 90°

drill model: Hydrapower Scout, Track mounted drilling fluid: Water hole diameter :

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 X = axial; O = diametral VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed				15.90 to 16.00 m: mudstone clasts up to 10 mm in diameter	FR					PT, 0 - 5°, UN, RO, CN PT, 0 - 5°, UN, RO, CN
					SANDSTONE: fine grained, pale grey, massive.				95%		PT, 0°, UN, RO, CN
		54	17.0		**INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%)**: sandstone is fine to medium grained, pale grey, siltstone dark grey, distinctly laminated between 0-5°.		O X X	d=0.16 a=0.67 d=0.37 a=0.54			PT, 0°, PL, RO, Clay CO
					Borehole SBT-GW-4003 terminated at 17.29 m						
		53	18.0								
		52	19.0								
		51	20.0								
		50	21.0								
		49	22.0								
		48	23.0								
		47									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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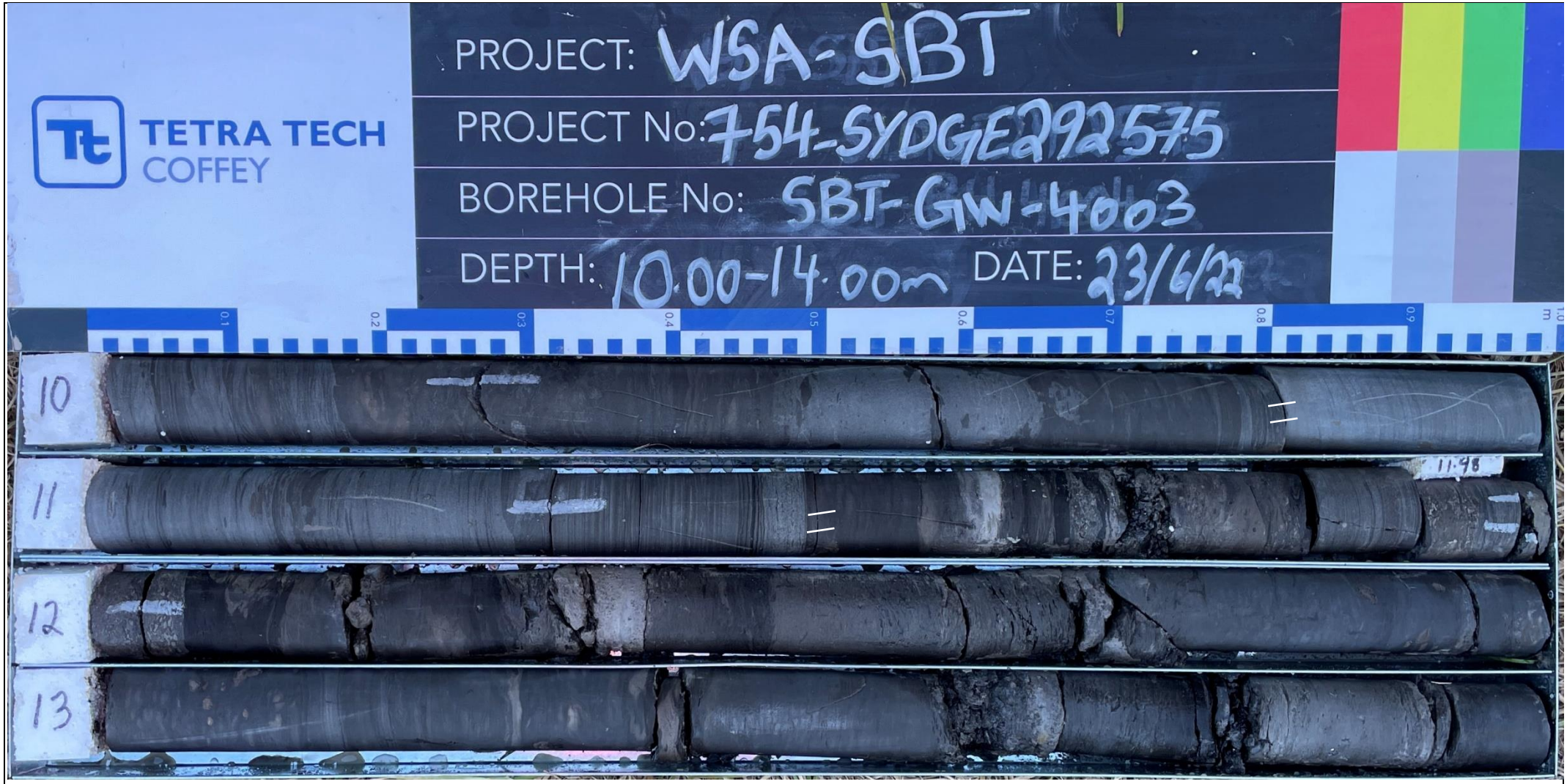
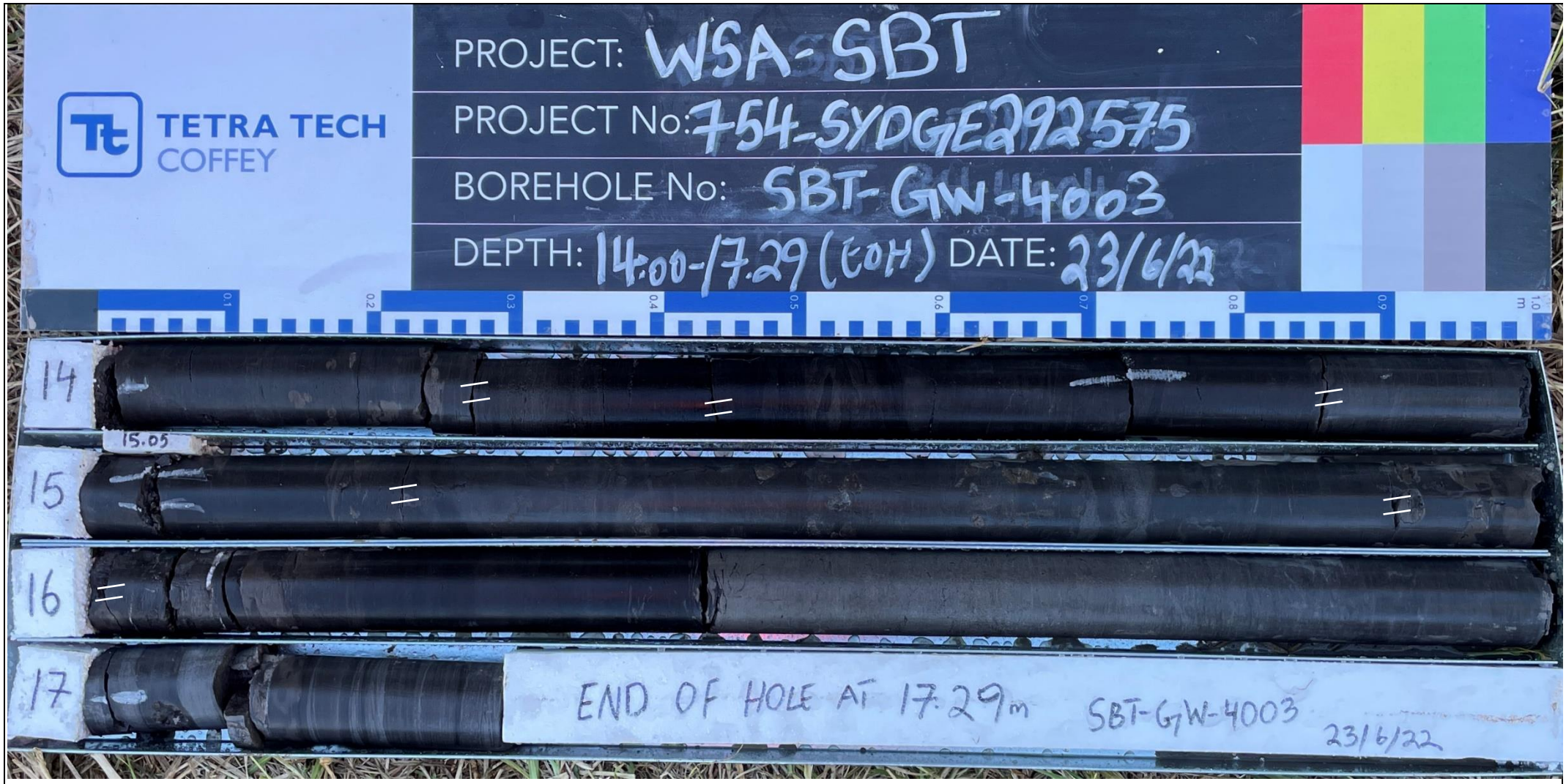
drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-BH-4003
original	A4		project no: 754-SYDGE292575	Figure 1

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date			title:	CORE PHOTOGRAPH SBT-BH-4003
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 2



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date				
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4003**
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**



drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-BH-4003
original	A4		project no: 754-SYDGE292575	Figure 4

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N		Not Observed						**FILL: Gravelly CLAY**: low plasticity, grey to dark grey, fine to coarse grained sub-rounded to angular asphaltic concrete gravel, with fine to medium grained sand, trace silt.				**FILL**
				73	1.0		CL-CH	**CLAY**: medium to high plasticity, orange-brown, trace root fibres. 0.7 m: becoming mottled orange-brown and pale grey with fine to medium grained sub-angular iron indurated gravel	<Wp	St	HP 150 kPa HP 130 kPa HP 200 kPa	**RESIDUAL**
			SPT 2, 6, 8 N*=14	72	2.0		CL-CH	**CLAY**: medium to high plasticity, pale grey, mottled orange-brown and red-brown, trace fine to medium grained sub-rounded to sub-angular iron indurated gravel.	<Wp	VSt	HP 280 kPa HP 300 kPa HP 300 kPa HP 320 kPa	
			SPT 6, 11, 16 N*=27	71	3.0		CH	**CLAY**: high plasticity, pale grey, mottled orange-brown, rock fabric visible thinly laminated, extremely weathered, inferred very low strength.		H	HP 580 kPa HP 600 kPa HP >600 kPa HP >600 kPa	**EXTREMELY WEATHERED MATERIAL**
			SPT 15, 25, 19 N*=44	70	4.0			**SILTSTONE**: grey to dark grey and orange, inferred very low to low strength, highly weathered.				**EXTREMELY WEATHERED SILTSTONE**
			SPT 31/100mm N*=R					Borehole SBT-GW-4005 continued as cored hole				
				69	5.0							
				68	6.0							
				67	7.0							
				66								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		73	1.0								
		72	2.0								
		71	3.0								
		70	4.0		started coring at 4.10m						
HQ3	Not Observed	69	5.0		**SILTSTONE**: grey to dark grey and orange-brown, indistinctly laminated, 2% fine to medium grained sub-rounded to irregular iron indurated clasts, mostly iron stained. 4.50 m: <5% iron inurated bands up to 25 mm, fine grained pale grey sandstone laminations, indistinctly laminated between 0-5°	XW - HW			100%		SM, 5°, PL, Clay, 20 mm, XW seam; PT, 5°, PL, SO, Fe SN, tight; JT, 25°, PL, SO, tight; PT, 0°, PL, SO, Fe SN
					INTERLAMINATED SANDSTONE (50%) AND SILTSTONE (50%): medium grained, pale brown, grey, siltstone is grey to dark grey, distinctly laminated at 0-5°.	HW		a=0.37	66%		JT, 80°, IR, Fe SN, tight & discontinuous; CS, 5°, PL, 20 mm, fine grained sub-angular gravel; JT, 45°, PL, Fe SN, tight; JT, 50°, PL, Fe SN, tight
		68	6.0		**SILTSTONE**: pale brown to brown.	XW					SM, 40°, PL, Fe - Clay, 80 mm, XW seam
					SILTSTONE: grey, indistinctly laminated at 0-5°.	MW		d=0.25 a=0.36			SM, 10°, PL, Fe - Clay, 10 mm, XW seam
					SANDSTONE: fine to medium grained, grey, brown, with 5-10% siltstone laminations, distinctly laminated at 0-5°.			d=0.16 a=0.57			JT, 65°, UN, SO, Fe SN; JT, 85°, ST, SO, Fe SN
		67	7.0		**SILTSTONE**: grey to dark grey, indistinctly laminated at 0-5°, minor zones of iron stainng.				68%		JT x2, 45°, ST, SO, Fe SN; JT, 85°, IR, SO, Fe SN; JT, 85°, UN, SO, tight; JT, 40°, PL, SO, Fe SN, tight
		66						d=0.02 a=0.05			JT, 65°, UN, SO, Fe SN, tight

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ3	Not Observed			**SILTSTONE**: grey to dark grey, indistinctly laminated at 0-5°, minor zones of iron stainng. *(continued)*	MW			68%		SM, 0°, PL, Clay, 50 mm, XW seam; JT, 35°, PL, tight; JT, 55°, PL, SO, Fe SN
		65			SW			87%		
			9.0	fine grained pale grey sandstone laminations and beds up to 25 mm (8.45-9.08 m)			d=0.30 a=0.31; d=0.06 a=0.32			
		64	10.0				d=0.06 a=0.34	97%		JT, 35°, UN, SO, CN; CS, 10°, IR, Clay, 10 mm; SM, 25°, PL, Clay, 10 mm, XW seam
		63	11.0	**SANDSTONE**: fine to medium grained, grey and pale grey, with 5-10% siltstone laminations. 11.15 m: grading to fine grained sandstone			d=0.28 a=0.50			JT, 40°, PL, SO, CN
		62	12.0	**SILTSTONE**: dark grey, massive.	FR		d=0.34 a=0.31			PT, 5°, PL, SO, CN
		61	13.0	**SANDSTONE**: fine grained, pale grey to grey, trace dark grey siltstone lenses, distinctly laminated at 0-5°. 12.68 m: becoming pale grey-grey			d=0.17 a=0.49	100%		
		60	14.0	**INTERLAMINATED SANDSTONE (80%) AND SILTSTONE (20%)**: fine to medium grained, pale grey to grey, siltstone is dark grey, distinctly laminated at 0-5°.						PT, 0°, PL, SO, CN; PT, 0°, PL, SO, CO - Clay, 3 mm
		59	15.0				d=0.15 a=0.46			PT, PL, SO, CO - Clay, 5 mm
		58					d=0.57 a=0.49	93%		

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ3	Not Observed				FR		a=0.46 d=0.12			PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN
		57		**SANDSTONE**: pale grey, with occasional irregular siltstone laminations, dark grey.						
			17.0	**INTERBEDDED SANDSTONE (70%) AND SILTSTONE (30%)**: fine grained, pale grey to grey, siltstone is dark grey, distinctly laminated.			d=1.73 a=4.14 d=0.14 a=0.10	93%		
		56								
			18.0				d=0.94 a=1.01			
		55		**SANDSTONE**: fine grained, pale grey, distinctly laminated at 0-15°.						
			19.0	**SANDSTONE**: fine grained, pale grey, massive.						PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN JT, 90°, PL, RO, CN
		54						88%		
			20.0				d=0.70 a=1.61			PT, 5°, CU, RO, CN PT, 0°, PL, SO, VN
				SILTSTONE: dark grey to grey.			d=0.07 a=0.49			
		53								
			21.0	Borehole SBT-GW-4005 terminated at 21.00 m						
		52								
			22.0							
		51								
			23.0							
		50								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

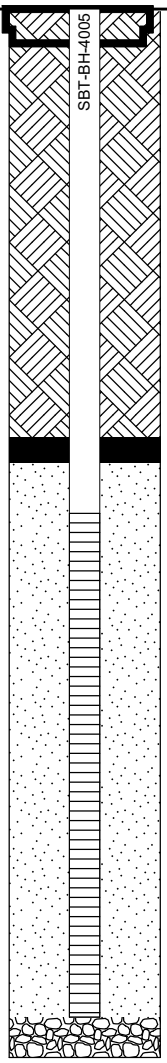
equipment type: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	material description (refer to engineering log for full description)
AD/T, N	Not Observed	72		**FILL**
				RESIDUAL
				EXTREMELY WEATHERED MATERIAL
			4	**EXTREMELY WEATHERED SILTSTONE**
HQ3		68		**BEDROCK**
			8	
		64		
			12	
		60		
			16	
		56		
			20	
		52		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-BH-4005	Standpipe piezometer				20.00 m			53.77	

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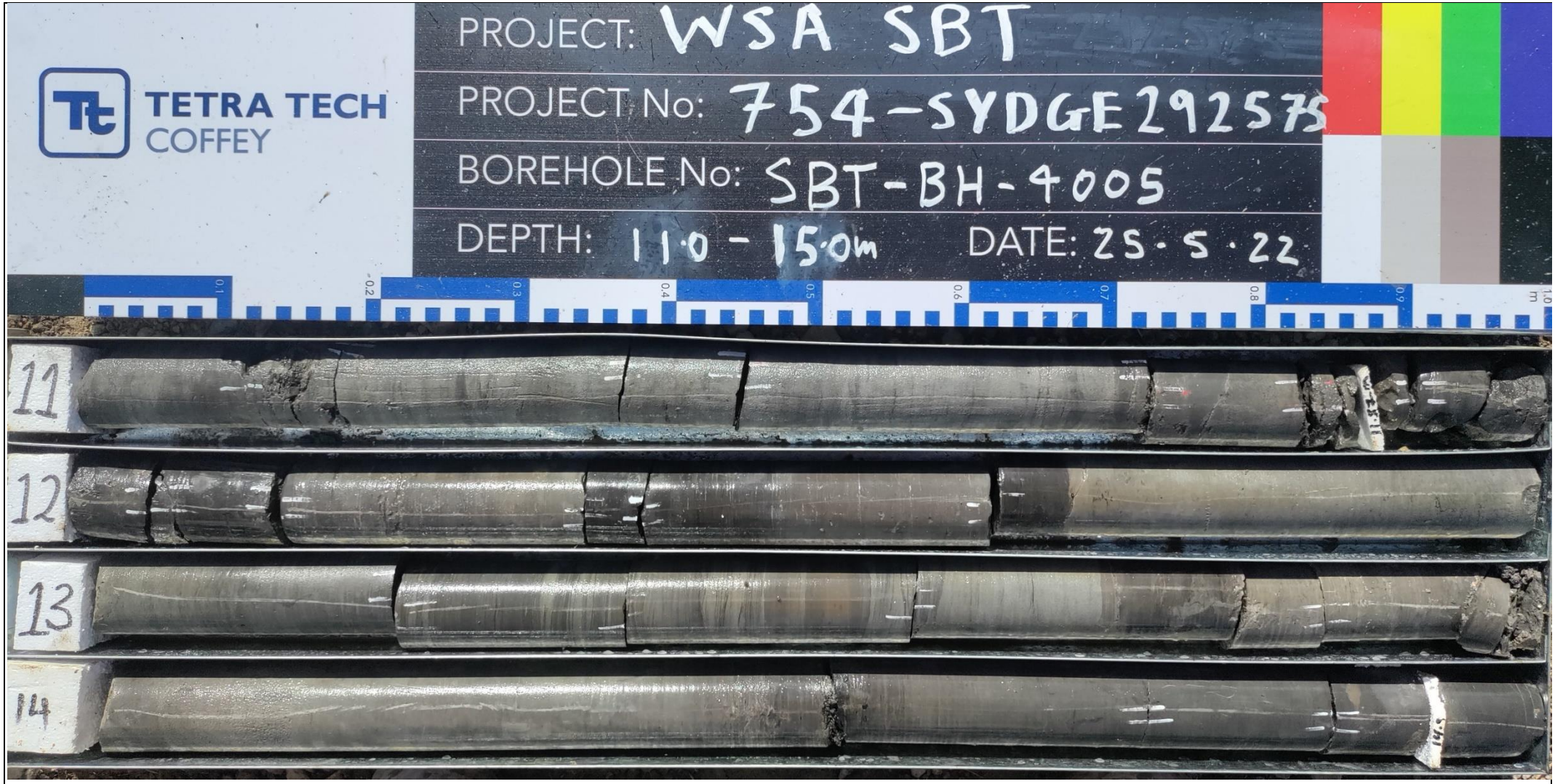
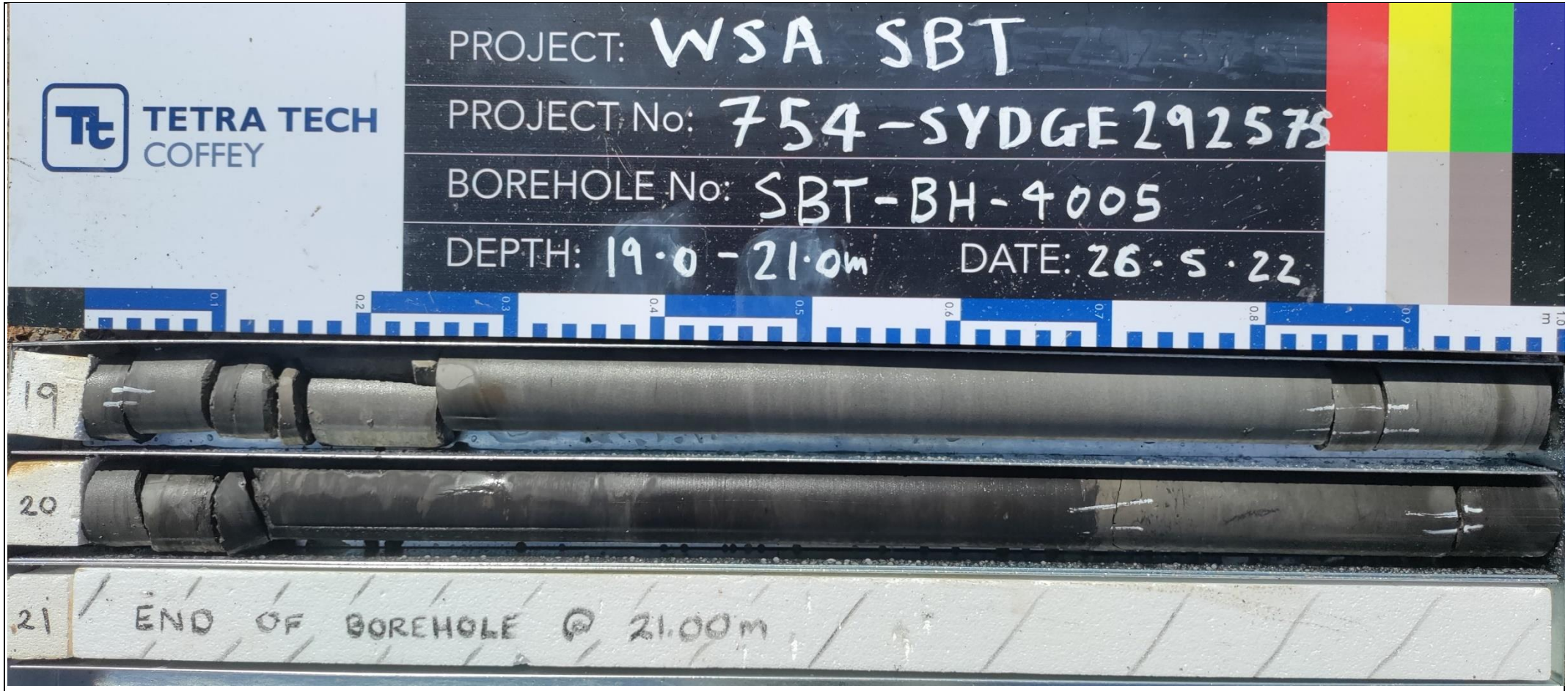
drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date				
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4005**
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4005**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4005**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4005**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 4**



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4005**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-4017***
principal:	***Sydney Metro***	sheet:	1 of 3
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Aerotropolis***	date started:	***02 Aug 2022***
		date completed:	***03 Aug 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290806; N: 6243871 (GDA2020 MGA) surface elevation: 70.87 m (AHD) angle from horizontal: 90°

drill model: Boart Longyear DB520, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N		Not Observed					CH	**TOPSOIL**: dark grey.	>Wp	St - VSt		**TOPSOIL**
							CH	**CLAY**: high plasticity, dark grey, with root fragments.				**RESIDUAL SOIL**
				70				**CLAY**: high plasticity, orange-brown mottled pale grey.	~Wp			
			SPT 4, 9, 11 N=20		1.0			1.0 m: becoming pale grey, orange-brown			>>HP 450 kPa >>HP 570 kPa HP >600 kPa	
				69								
			SPT 10, 15/70mm HB N=R		2.0			2.0 m: brown, pale grey mottled orange-brown		H	>>HP >600 kPa HP >600 kPa	
				68								
			SPT 4, 16, 17 N=33		3.0		CH	**CLAY**: high plasticity, grey, pale brown, rock fabric evident (extremely weathered siltstone).			>>HP >600 kPa	**EXTREMELY WEATHERED MATERIAL**
				67								
			SPT 8/120mm HB N=R		4.0			Borehole SBT-GW-4017 continued as cored hole				
				66	5.0							
				65	6.0							
				64	7.0							
				63								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4017***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***02 Aug 2022***
		date completed:	***03 Aug 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290806; N: 6243871 (GDA2020 MGA) surface elevation: 70.87 m (AHD) angle from horizontal: 90°

drill model: Boart Longyear DB520, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		70	1.0							
		69	2.0							
		68	3.0							
		67	4.0	started coring at 4.00m						
HQ3	Not Observed	66	5.0	**SILTSTONE**: brown, dark brown, with brown iron stain.	HW		d=0.02 a=0.25			HP >600 kPa; PT, 2°, IR, RO, CO
				SILTSTONE: dark grey, distinctly bedded at 0-5°, with 5-10% sandstone laminations and brown iron stain.	MW		d=0.12 a=0.57	87%		PT, 2°, UN, RO, CO; PT, 2°, IR, RO, VN; JT, 85°, IR, RO, VN, 60-85°; PT, 1°, IR, RO, CO
		65	6.0	**SILTSTONE**: dark grey, indistinctly bedded, trace fine grained pale grey sandstone.						PT, 3°, IR, RO, CO; PT, 15°, PL, SO, VN; JT, 45°, CU, VN, 10-45°; PT, 5°, UN, SL, VN; PT, 7°, UN, RO, VN
		64	7.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: siltstone is dark grey, sandstone is pale grey, sandstone is pale grey, distinctly laminated at 0-5°.	SW		d=0.04 a=0.45	92%		PT, 3°, UN, SL, VN; PT, 3°, IR, RO, CO; PT, 2°, UN, RO, CO
		63		**SILTSTONE**: dark grey, indistinctly bedded, with brown stains.			d=0.20 a=0.34			PT, 3°, UN, RO, CO

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4017***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***02 Aug 2022***
		date completed:	***03 Aug 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290806; N: 6243871 (GDA2020 MGA) surface elevation: 70.87 m (AHD) angle from horizontal: 90°

drill model: Boart Longyear DB520, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ3	Not Observed			**SILTSTONE**: dark grey, indistinctly bedded, with brown stains. *(continued)*	SW		d=0.27 a=0.30			PT, 3°, UN, SL, CO; JT, 45°, IR, RO, CN, 30-45°
		62	9.0	8.58 m: becoming grey, pale grey				92%		PT, 5°, UN, SL, VN
							d=0.01 a=0.46			JT, 30°, UN, SL, VN; JT, 20°, UN, SL, CO
		61	10.0	**NO CORE:** 0.13 m						SM, 5°, IR, RO, CN, 50 mm
				SILTSTONE: dark grey, grey, indistinctly bedded, trace brown stains.	SW		d=0.06 a=0.14			PT, 5°, IR, RO, CN; PT, 2°, UN, SL, VN; PT, 3°, UN, SL, VN
		60	11.0					88%		PT, 15°, PL, SO, CN
		59	12.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: siltstone is dark grey, sandstone is fine grained, pale grey, distinctly laminated at 0-5°.	FR		d=0.36 a=0.91			JT, 45°, CU, SO, CN, 10-45°
		58	13.0	**SANDSTONE**: fine grained, pale grey, trace siltstone bands.			d=0.17 a=0.98	100%		JT, 7°, UN, SL, VN
		57	14.0	Borehole SBT-GW-4017 terminated at 13.50 m Target depth						
		56	15.0							
		55								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-4017.GPJ <<DrawingFile>> 23/11/2022 16:20

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4017**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4017**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4017**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-4019***
principal:	***Sydney Metro***	sheet:	1 of 4
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Aerotropolis***	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N		Not Observed						**FILL: Silty CLAY**: high plasticity, dark grey, with fine to coarse gravel, roots.	>Wp			**FILL**
							CH	**CLAY**: high plasticity, pale grey mottled red-brown, with fine to coarse gravel.	<Wp	St - VSt		**RESIDUAL SOIL**
				74								
			SPT 10, 3/20mm HB N=R		1.0			1.0 m: becoming brown 1.05 m: clay becoming powdery		H	>>HP 500 kPa HP >600 kPa	
				73				1.7 m: becoming dark red, pale grey	=Wp			
			SPT 6, 8/60mm HB N=R		2.0			2.0 m: becoming brown, pale grey			>>HP >600 kPa HP >600 kPa	
				72								
			SPT 7/60mm HB N=R		3.0			3.03 m: powdery clay			>>HP >600 kPa	
								3.5 m: becoming dark grown, grey				
				71				3.8 m: SILTSTONE fragments encountered				
			SPT 14/110mm HB N=R		4.0			**SILTSTONE**: dark grey, extremely weathered, very low - low strength.			>>HP >600 kPa	**EXTREMELY WEATHERED SILTSTONE**
								Borehole SBT-GW-4019 continued as cored hole				
				70	5.0							
				69	6.0							
				68	7.0							
				67								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-4019.GPJ <<DrawingFile>> 23/11/2022 16:30

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4019***
principal:	*Sydney Metro*	sheet:	2 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		74	1.0								
		73	2.0								
		72	3.0								
		71	4.0		started coring at 4.20m						
HQ	Not Observed	70	5.0		**NO CORE:** 0.10 m **SILTSTONE**: dark grey, grey.	HW			86%		JT, 85°, healed, 70-85° JT, 85°, healed, 75-85°
		69	6.0		**NO CORE:** 0.08 m **SILTSTONE**: dark grey, grey-brown, with orange-brown stains.	HW			81%		PT, 2°, healed PT, 2°, healed JT, 80°, UN, RO, Fe SN PT, 4°, PL, RO, Fe SN JT, 60°, UN, RO, Fe SN
		68	7.0		**NO CORE:** 0.10 m **SILTSTONE**: dark grey, with 10% sandstone laminations, distinctly laminated at 0-10°.	MW	O-X O-X	d=0.02 a=0.11 d=0.09 a=0.18	86%		PT, 3°, UN, SL, CO JT, 60°, UN, SL, CO
		67									PT, 10°, UN, SL, CO

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4019.GPJ <<DrawingFile>> 23/11/2022 16:30

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-4019***
principal:	***Sydney Metro***	sheet:	3 of 5
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Aerotropolis***	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed			**SILTSTONE**: dark grey, with 10% sandstone laminations, distinctly laminated at 0-10°. *(continued)*	MW					PT, 5°, UN, SL, CO
		66	9.0	**INTERLAMINATED SILTSTONE (50%) AND SANDSTONE (50%)**: dark grey, sandstone is fine grained, grey, pale grey, distinctly laminated at 0-5°.	SW - FR		d=0.05 a=0.47	86%		
							d=0.03 a=0.49			
		65	10.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: dark grey, sandstone is fine to medium grained, pale grey, distinctly laminated at 0-15°.			d=0.02 a=0.32			
		64	11.0	**SILTSTONE**: dark grey, distinctly laminated at 0-5°, with 5% sandstone laminations.	FR		d=0.10 a=0.97	100%		
		63	12.0	**SILTSTONE**: dark grey, with 5-10% sandstone laminations, distinctly laminated at 0-5°.			d=0.05 a=0.27			JT, 45°, IR, RO, CO
		62								PT, 5°, PL, SL, CO
			13.0	**SANDSTONE**: fine grained, pale grey, with 5-10% irregular siltstone laminations, dark grey, indistinctly laminated.			d=0.06 a=0.27			PT, 10°, UN, SL, VN, 5-10° PT, 5°, UN, SL, VN, 2-5°
		61	14.0	**SILTSTONE**: dark grey, with 5% sandstone laminations.			d=0.09 a=0.28			
				SANDSTONE: fine grained, pale grey, with 10% siltstone laminations.						
		60	15.0	**SILTSTONE**: dark grey, with 5% irrgular sandstone laminations.			d=0.01 a=0.32			
		59						96%		

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4019.GPJ <<DrawingFile>> 23/11/2022 16:30

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4019***
principal:	*Sydney Metro*	sheet:	4 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	58	17.0	**SILTSTONE**: dark grey, with 5% irrgular sandstone laminations. *(continued)*	FR	d=0.18 a=0.57	96%		PT, 10°, UN, SL, VN, 3-10°; PT, 20°, UN, SL, VN, 5-20
		57	18.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: dark grey, sandstone is fine grained, grey to pale grey, distinctly laminated at 0-5°.		d=0.07 a=0.58			
		56	19.0	**SANDSTONE**: fine grained, pale grey, distinctly laminated at 0-5°.		d=0.17 a=0.92	99%		
		55	20.0	**SILTSTONE**: dark grey, distinctly laminated at 0-5°, with 5% sandstone laminations.		d=0.17 a=0.27			PT, 4°, IR, RO, VN
		54	21.0	**INTERLAMINATED SANDSTONE (80%) AND SILTSTONE (20%)**: fine grained, pale grey, siltstone is dark grey, distinctly laminated at 0-5°.		d=0.07 a=0.45; d=0.14 a=0.94			JT, 60°, UN, RO, CN, 30-60°
		53	22.0			d=0.47 a=1.10			
		52	23.0	**SANDSTONE**: fine grained, pale grey, trace dark grey siltstone.			100%		
		51		**SILTSTONE**: dark grey, with 5-10% sandstone laminations, distinctly laminated at 0-10°.		d=0.17			

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4019.GPJ <<DrawingFile>> 23/11/2022 16:30

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4019***
principal:	*Sydney Metro*	sheet:	5 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information				material substance					rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	50	25.0		**SILTSTONE**: dark grey, with 5-10% sandstone laminations, distinctly laminated at 0-10°. *(continued)*	FR		a=0.72 d=0.02 a=0.42	100% 91%		JT, 45°, CU, RO, CN, 20-45°
		49	26.0		Borehole SBT-GW-4019 terminated at 25.00 m Target depth						
		48	27.0								
		47	28.0								
		46	29.0								
		45	30.0								
		44	31.0								
		43									

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method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

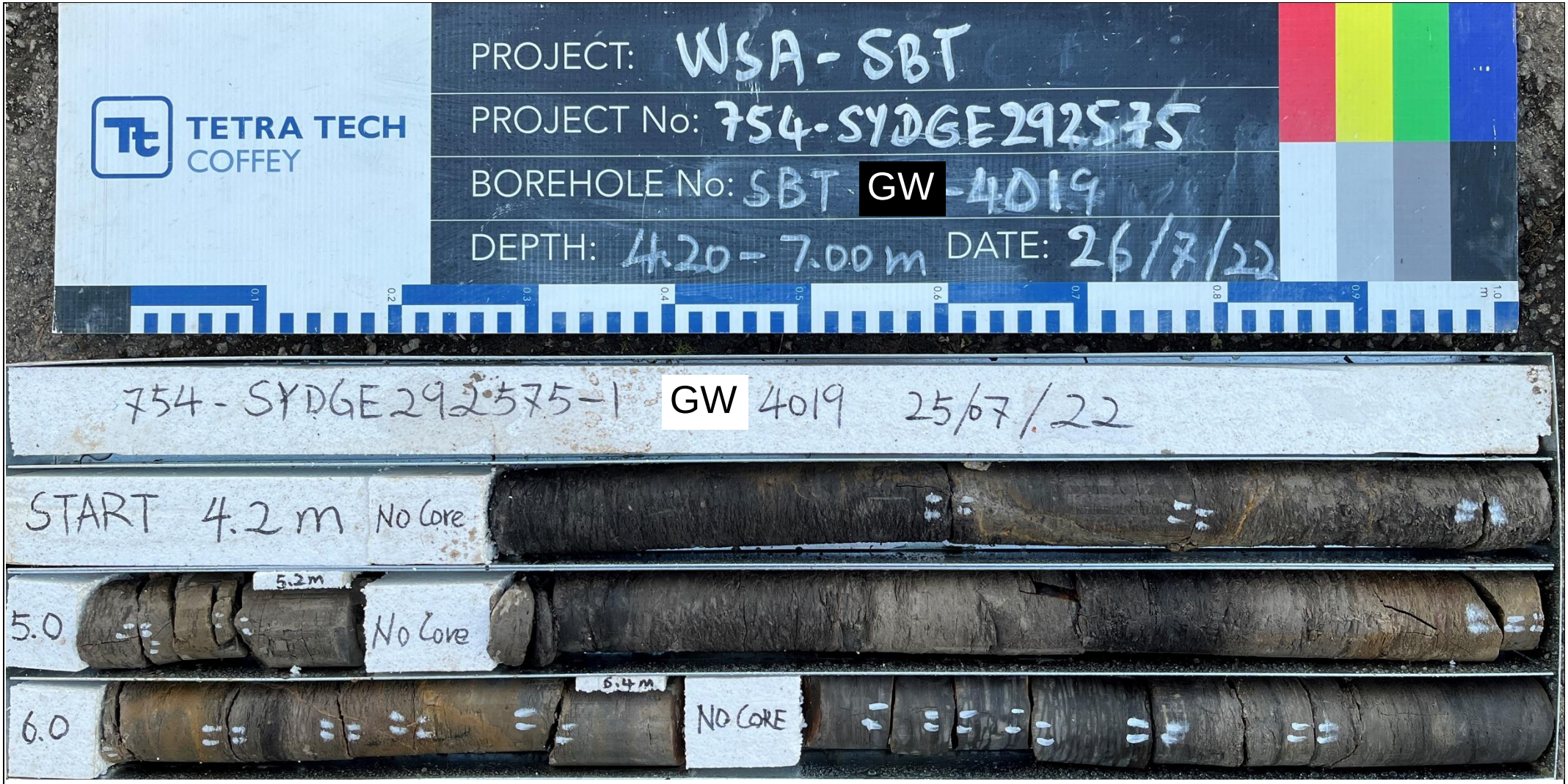
strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

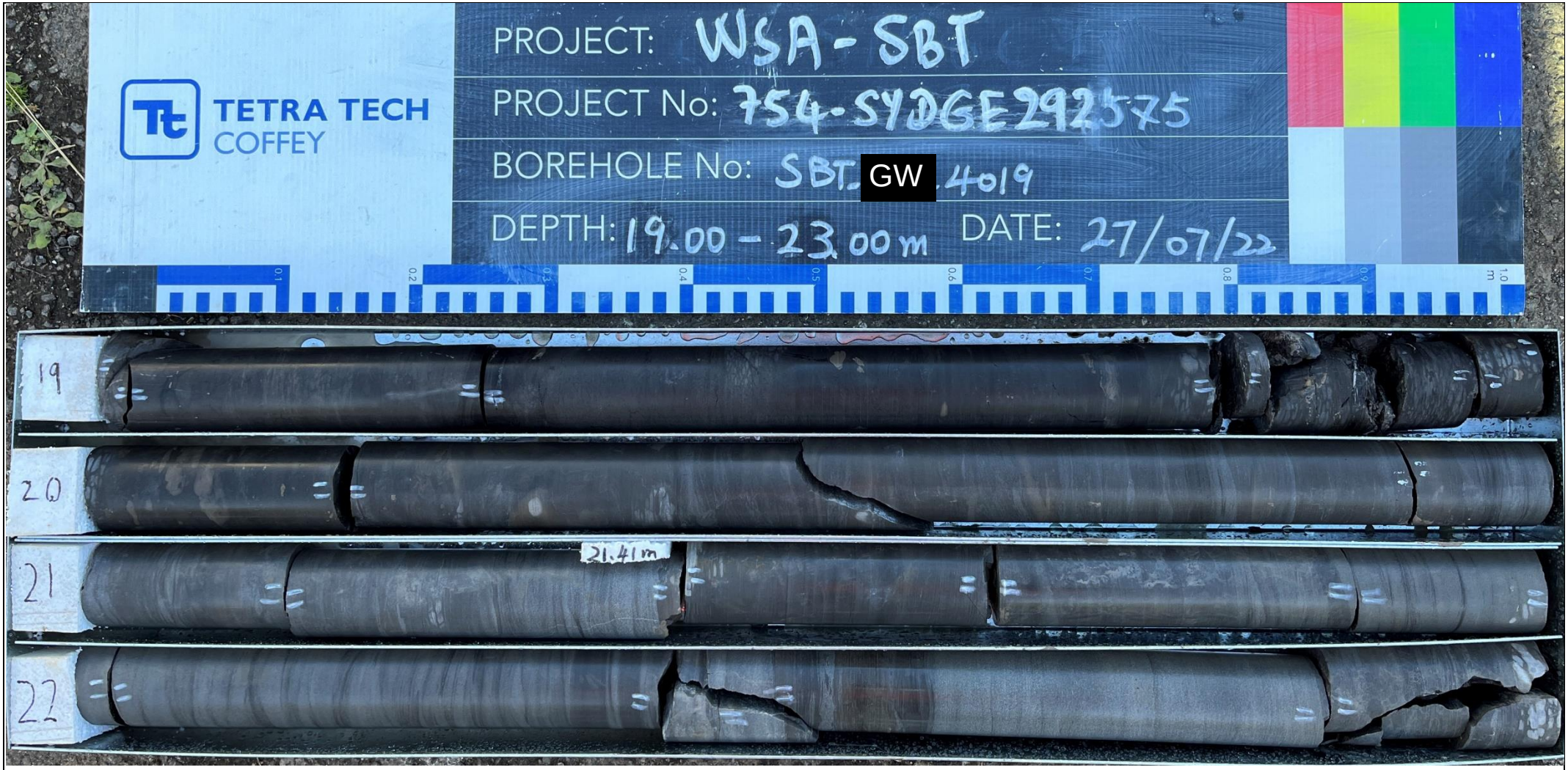


drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	28/10/2022			
scale	N/A		title:	CORE PHOTOGRAPH SBT-BH-4019
original	A4		project no: 754-SYDGE292575	Figure 4



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
original	**A4**		project no: **754-SYDGE292575**	**Figure 6**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4020***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street Bringelly*	date started:	***31 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF/MR***
		checked by:	

position: E: 289584; N: 6245841 (GDA2020 MGA) surface elevation: 71.20 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N			E	71				**FILL: Silty CLAY**: medium plasticity, brown, red, with roots and rootlets.	M			**FILL**
			E				CH	**CLAY**: high plasticity, red, trace fine to medium grained sub-rounded gravel.		VSt		**RESIDUAL SOIL**
			SPT 3, 9, 11 N*=20	70	1.0							HP 250 kPa HP 360 kPa HP 440 kPa
			SPT 5, 10, 14 N*=24	69	2.0						>>>HP 600 kPa >>>HP >600 kPa	HP >600 kPa
								Borehole SBT-GW-4020 continued as cored hole				
				68	3.0							
				67	4.0							
				66	5.0							
				65	6.0							
				64	7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-4020.GPJ <<DrawingFile>> 31/10/2022 12:41

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4020***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street Bringelly*	date started:	***31 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF/MR***
		checked by:	

position: E: 289584; N: 6245841 (GDA2020 MGA) surface elevation: 71.20 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		71									
			1.0		not encountered						
		70									
			2.0								
		69			started coring at 2.35m						
HQ			3.0		**CLAY**: high plasticity, grey, mottled red, with fine iron indurated gravel (extremely weathered siltstone).	RS		a=0.05 d=0.05			Residual
		68			**SILTSTONE**: pale grey to grey, mottled brown, indistinctly bedded between 0-5° with iron stone gravel and iron staining.	XW					Ex W material; CS, Fe SN, 150 mm
			4.0					a=0.03 d=0.03			SM, 0 - 5°, Clay, 40 mm
		67			**SILTSTONE**: dark grey, mottled orange brown, with thin iron indurated sandstone bands, distinctly interlmainated between 0-5°.	HW - MW			78%		Bedrock; JT, 80°, IR, RO, Fe SN; SM, 0 - 5°, Clay, 20 mm; SM, 0 - 5°, Clay, 10 mm; PT, 10°, IR, RO, CO - Clay
					INTERLAMINATED SILTSTONE (60%) AND SANDSTONE (40%): sandstone is grey, distinctly cross-bedded between 0-10° with iron indurated bands.			a=0.28 d=0.05			PT, 10°, PL, RO, Fe SN; PT, 0°, PL, RO, Fe SN
			5.0								SM, 0 - 10°, Clay, 15 mm; SM, 0 - 5°, Clay, 50 mm
		66				SW - MW					PT, 5°, PL, RO, Fe SN; JT, 80°, PL, RO, Fe SN; PT, 0°, PL, RO, Fe SN; CS, 0 - 5°, 10 mm, clay & crushed rock
					5.59 m: iron stone gravel						
			6.0		**SANDSTONE**: fine to medium grained, pale brown to grey, with 1-% siltstone laminations, distinctly laminated between 0-5°. 6.04 m: becoming 80% sandstone, 20% siltstone			a=0.71 d=0.25			PT, 5°, PL, RO, Fe SN; PT, 5°, PL, RO, Fe SN
		65						a=1.30 d=0.37			PT, 35°, PL, RO, VN - Clay; PT, 10°, PL, RO, CN
			7.0		6.74 to 6.76 m: iron indurated band; 6.85 to 7.11 m: iron indurated zone				88%		PT, 0°, PL, RO, Fe SN; JT, 80°, PL, RO, Fe SN; JT, 35°, PL, RO, Fe SN; PT, 5°, PL, RO, Fe SN
		64			7.29 m: iron induration disappears	FR					PT, 5°, PL, RO, CN
					7.77 m: becoming 50% siltstone, 50% sandstone						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4020.GPJ <<DrawingFile>> 31/10/2022 12:42

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4020***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street Bringelly*	date started:	***31 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF/MR***
		checked by:	

position: E: 289584; N: 6245841 (GDA2020 MGA) surface elevation: 71.20 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ		63			**SANDSTONE**: fine to medium grained, pale brown to grey, with 1-% siltstone laminations, distinctly laminated between 0-5°. *(continued)*	FR		a=0.68 d=0.34			
								a=1.10 d=0.55	88%		PT, 10°, PL, RO, CN; PT, 10°, PL, RO, CN; JT, 85°, IR, RO, CN
					8.71 to 8.85 m: sandstone band						
			9.0								
		62			9.09 to 9.11 m: carbonaceous bands						
					9.42 to 9.47 m: shale band 50 mm			d=5.12 a=0.69			JT, 20°, PL, RO, Fe SN
			10.0								
		61							89%		
					10.69 to 10.79 m: weathered seam in rock						
			11.0					a=0.82 d=0.63			
		60			11.24 m: siltstone gravel			a=0.77 d=0.05			PT, 0°, PL, RO, CN; PT, 10°, PL, RO, VN - Clay
			12.0		**SILTSTONE**: dark grey-grey, indistinctly bedded between 0-5°, trace occasional sandstone gravel. 12.04 to 12.47 m: weathered band with ridges	SW - FR					PT, 10°, PL, RO, CO - Clay
		59						a=0.39 d=0.17			
			13.0								PT, 0°, IR, RO, VN - Clay
		58			13.11 to 13.48 m: weathered zone with ridges				98%		
											PT, 10°, PL, RO, VN - Clay
			14.0					a=0.41 d=0.06			
		57									PT, 0°, PL, RO, CN
								a=0.33 d=0.17			
					14.53 to 14.72 m: interlaminated bands 70% sandstone, 30% siltstone						
			15.0								
		56						a=0.46 d=0.04			
					SANDSTONE: fine to medium grained, grey, with 5% siltstone laminations.				98%		
					SILTSTONE: dark grey, indistinctly bedded						PT, 10°, PL, VR, CO, clay & crushed rock

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4020***
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street Bringelly*	date started:	***31 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF/MR***
		checked by:	

position: E: 289584; N: 6245841 (GDA2020 MGA) surface elevation: 71.20 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 115 mm

drilling information				material substance							rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ		55			between 0-5°, trace occasional sandstone gravel. **SILTSTONE**: dark grey, indistinctly bedded between 0-5°, trace occasional sandstone gravel. *(continued)*	SW - FR		a=0.46 d=0.06	98%		PT, 10°, PL, VR, CO, clay & crushed rock
		54	17.0		**INTERLAMINATED SILTSTONE (50%) AND SANDSTONE (50%)**: dark grey, sandstone is fine grained, pale grey, distinctly laminated between 0-5°.	FR		a=0.56 d=0.25			PT, 5°, PL, RO, CN
					Borehole SBT-GW-4020 terminated at 17.24 m Target depth						
		53	18.0								
		52	19.0								
		51	20.0								
		50	21.0								
		49	22.0								
		48	23.0								

method
DT diatube
NMLCNMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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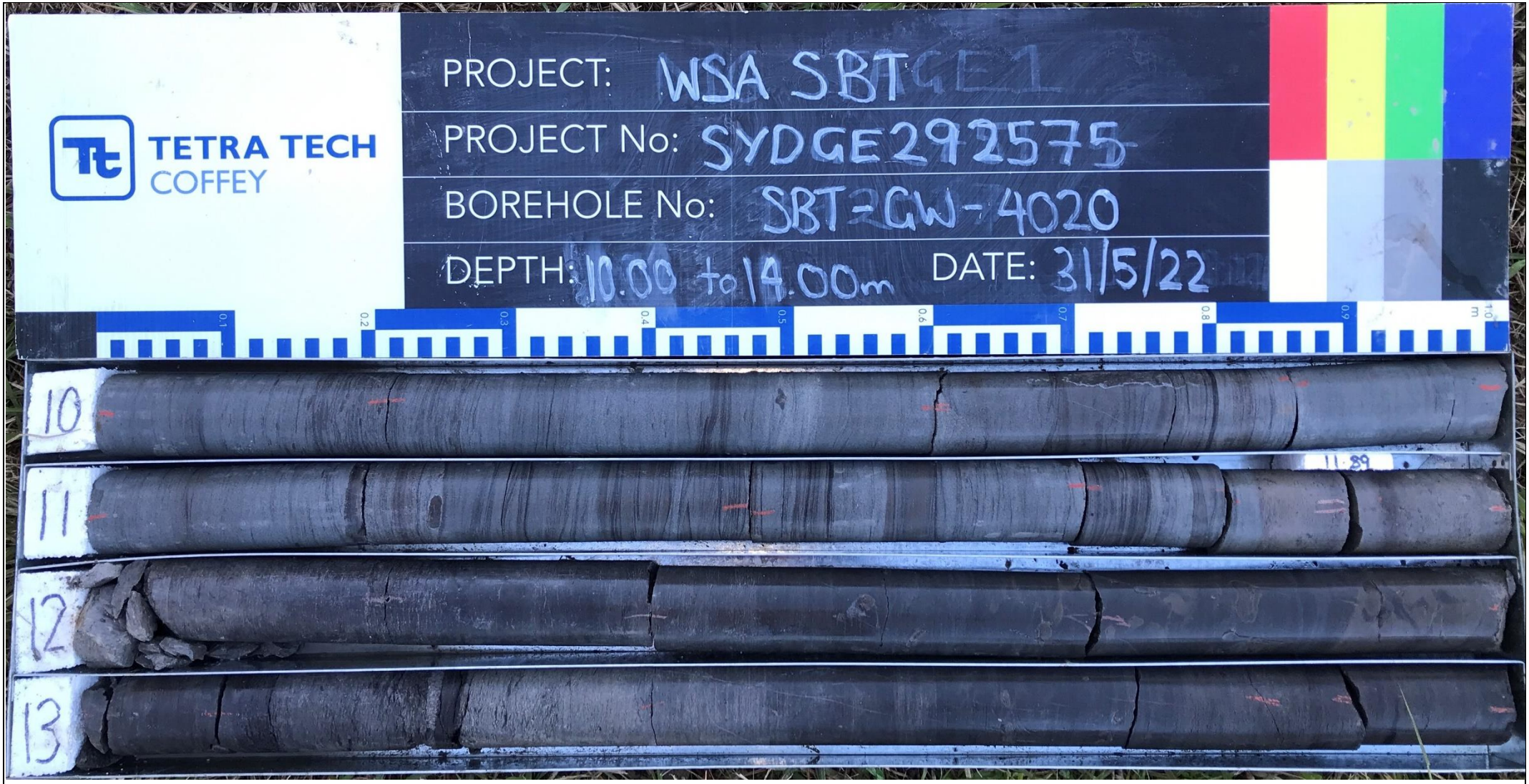
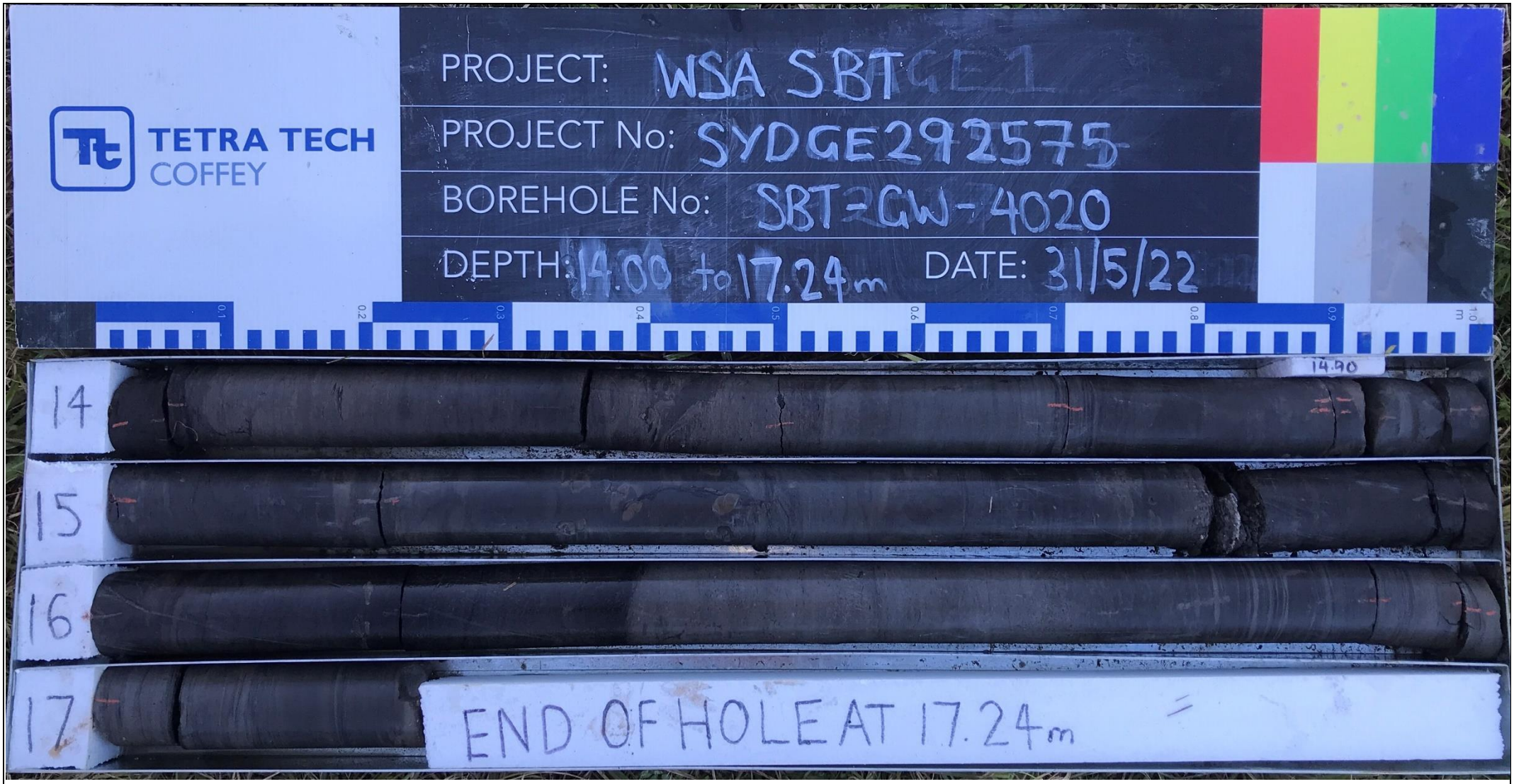
drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-4020**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-4020**
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-4020**
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**



drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	23/09/2022		title:	CORE PHOTOGRAPH SBT-GW-4020
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 4

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4021***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Aug 2022***
		date completed:	***26 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 291112; N: 6243748 (GDA2020 MGA) surface elevation: 61.82 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T; C		Not Observed					CH-MH	**Clayey SILT**.	M			**TOPSOIL**
							CH-MH	**Clayey SILT**: high liquid limit, grey-brown.	~Wp	St		**POSSIBLE ALLUVIUM**
								Silty CLAY: high plasticity, yellow-brown, some rounded ironstone gravel.				
				61	1.0							
			SPT 5, 4, 5 N=9									HP 200 - 300 kPa
				60	2.0		SC-SM	**Silty CLAYEY SAND**: fine to coarse grained, high plasticity, grey mottled orange-brown.	>Wp			
			SPT 4, 3, 5 N=8	59	3.0							HP 60 - 120 kPa
				58	4.0		GC	**CLAYEY GRAVEL**: fine to coarse grained, sub-rounded.	<Wp			
			SPT 30/100mm HB N=R					**SANDSTONE**: fine grained, orange-brown, with SHALE laminations. Borehole SBT-GW-4021 continued as cored hole				**EXTREMLEY WEATHERED SANDSTONE**
				57	5.0							
				56	6.0							
				55	7.0							
				54								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4021***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Aug 2022***
		date completed:	***26 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 291112; N: 6243748 (GDA2020 MGA) surface elevation: 61.82 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		61	1.0								
		60	2.0								
		59	3.0								
		58	4.0		started coring at 4.10m						
HQ	Not Observed	57	5.0		**SANDSTONE**: fine grained, orange-brown, with siltstone laminations.	HW		d=0.05 a=0.05	83%		JT, 85°, UN, SO, Fe VN SM, 5°, PL, SO, Clay filled, 20 mm PT, 10°, PL, SO, Fe SN
		56	6.0		**SILTSTONE**: grey to dark grey. 5.56 to 5.59 m: sideritic/FeOH band	XW MW		d=0.13 a=0.28			SM, 10°, PL, SO, Clay filled, 130 mm PT, 5°, PL, SO, Coal, 4 mm JT, 20°, PL, SO, sideritic VN SM, 10°, PL, SO, Clay filled, 8 mm
		55	7.0		**SANDSTONE**: fine grained, grey, pale grey, with 5-10% siltstone laminations, distinctly laminated at 0-5°.	SW - FR		d=0.58 a=1.26 d=0.65 a=0.97	81%		PT, 10°, PL, SO, Fe SN PT, 10°, PL, SO, Fe SN PT, 5°, PL, SO, Fe SN PT, 10°, PL, SO, CN, silt lamination JT, 40°, PL, SO, CN PT, 10°, PL, SO, silt lamination PT, 10°, PL, SO, PTs, silt laminations
		54									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-4021.GPJ <<DrawingFile>> 24/11/2022 11:02

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4021***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Aug 2022***
		date completed:	***26 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 291112; N: 6243748 (GDA2020 MGA) surface elevation: 61.82 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	53	9.0		**INTERBEDDED SANDSTONE (80%), SILTSTONE (20%)**: sandstone is fine grained, pale grey, siltstone is dark grey, distinctly laminated at 0-10°.	SW - FR		d=0.93 a=1.15	81%		PT, 10°, PL, SO, shale/sandstone split; PT, 10°, PL, SO, PTs, silt laminations; JT, 88°, PL, RO, VN, sideritic; PT, 10°, PL, SO, silt lamination; PT, 10°, PL, SO, silt lamination; PT, 15°, PL, RO, silt lamination
		52	10.0		**SANDSTONE**: fine grained, pale grey, grey, with siltstone bands up o 100mm thick. 9.58 to 9.68 m: sideritic alteration			d=1.61 a=3.52; d=0.15 a=0.41	85%		
		51	11.0		10.36 to 10.63 m: Carbonaceous shale: grey to black; **SILTSTONE**: dark grey, grey, with irregular sandsone laminations.	MW; FR					
		50	12.0		11.63 to 11.77 m: black carbonaceous shale			d=0.22 a=0.37			
		49	13.0		Borehole SBT-GW-4021 terminated at 12.00 m Target depth						
		48	14.0								
		47	15.0								
		46									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-4021***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Aug 2022***
		date completed:	***26 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 291112; N: 6243748 (GDA2020 MGA) surface elevation: 61.82 m (AHD) angle from horizontal: 90°

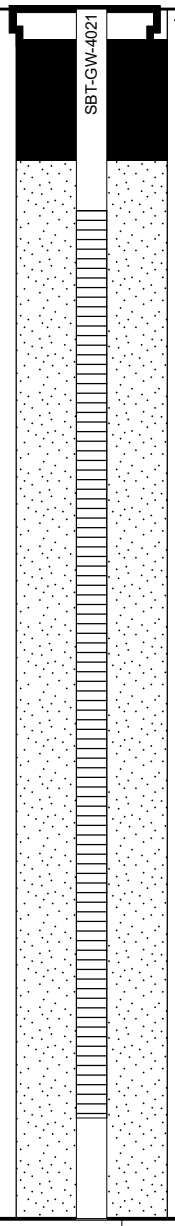
equipment type: Geoprobe, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company: Stratacore
driller: DM
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, C, HQ, N	Not Observed	60, 58, 56, 54, 52, 50	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11		**TOPSOIL** **POSSIBLE ALLUVIUM** **EXTREMLEY WEATHERED SANDSTONE** **BEDROCK**



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-4021	standpipe				12.00 m			49.82	

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drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	28/10/2022		title:	CORE PHOTOGRAPH SBT-BH-4021
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 1

drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	28/10/2022		title:	CORE PHOTOGRAPH SBT-BH-4021
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 2

TETRA TECH COFFEY

DRAFT

Engineering Log - Borehole

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4022***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street, Bringelly*	date started:	***27 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF***
		checked by:	

position: E: 289586; N: 6245762 (GDA2020 MGA) surface elevation: 74.44 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N				74			CH	**FILL: Sandy GRAVEL**: fine to coarse grained, sub-rounded to sub-angular, grey, fine to medium sand.	D	St - VSt		**FILL**
								CLAY: high plasticity, red to brown, trace root and root fibres.	>Wp			**RESIDUAL SOIL**
			SPT 2, 7, 10 N=17	73	1.0		CH	**CLAY**: high plasticity, pale grey mottled red.	<Wp	VSt		HP 390 kPa HP 400 kPa HP 400 kPa
			SPT 9, 13, 22 N=35	72	2.0			2.0 m: becoming pale grey mottled red-brown		H		HP >600 kPa HP >600 kPa HP >600 kPa
				71	3.0			Borehole SBT-GW-4022 continued as cored hole				
				70	4.0							
				69	5.0							
				68	6.0							
				67	7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4022***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street, Bringelly*	date started:	***27 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF***
		checked by:	

position: E: 289586; N: 6245762 (GDA2020 MGA) surface elevation: 74.44 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		74									
			1.0								
		73									
			2.0								
		72			started coring at 2.60m						
HQ					**CLAY**: high plasticity, pale grey mottled red, trace fine to medium, sub-angular gravels.	RS					
					CLAY: high plasticity, pale grey with red-brown and and orange-brown bands, with very low strength siltstone bands up to 300 mm thick and ironstone bands up to 60 mm thick, rock texture evident (extremely weathered siltstone). 3.10 to 3.40 m: Siltstone: brown and red-brown, very low strength	XW					SM, Clay, 20 mm SM, Clay, 10 mm PT, 0°, PL, Clay CO, 3 mm PT, 0°, PL, RO, Clay, 4 mm JT, 40°, PL, RO, Clay CO, 5 mm
			3.0								
		71									
			4.0								PT, 0°, PL, RO, Fe SN
		70			4.40 m: very low strength ironstone band, 50 mm thick						
			5.0								PT, 10°, PL, RO, Clay VN
		69									
					SILTSTONE: grey-brown and dark grey, distinctly laminated.	HW					JT, 85°, PL, RO, Clay VN
			6.0								
		68									SM, Clay, 50 mm
					SILTSTONE: dark grey, with 5% sandstone laminations, distinctly laminated.	SW			69%		
			7.0								PT, 0°, PL, RO, SN - Fe
		67									
					Between 7.60 to 7.80 m: grey mottled brown to orange	HW					SM, Clay, 20 mm PT x6, 0 - 5°, PL, RO, Fe, Clay CO
					From 7.80 m: pale grey could be claystone or fine	FR					JT, 20°, PL, RO, Fe, Clay VN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4022***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street, Bringelly*	date started:	***27 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF***
		checked by:	

position: E: 289586; N: 6245762 (GDA2020 MGA) surface elevation: 74.44 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					sandstone, hard to tell from photo	FR					
		66			**INTERLAMINATED SANDSTONE (60%) AND SILTSTONE (40%)**: fine grained, pale grey, siltstone is dark grey, with occasional sandstone beds up to 30 mm, distinctly laminated.				69%		Drilling Break JT, 55°, PL, CA CO - healed
			9.0								
		65									Drilling Break Drilling Break
			10.0								JT, 60 - 85°, UN, CA CO, Tight
		64							96%		SM, Clay, 20 mm SM, Clay, 50 mm
			11.0		**SILTSTONE**: dark grey, with 5% sandstone laminations, trace sandstone nodules up to 3 mm in diameter, distinctly laminated.						
		63			**INTERLAMINATED SILTSTONE (60%) AND SANDSTONE (40%)**: dark grey, sandstone is fine grained and pale grey, with occasional siltstone beds up to 60 mm, distinctly laminated.						JT, 20°, CU, RO, CA CO, Tight
			12.0								JT, 85°, PL, RO, CA VN
		62									JT, 75°, PL, RO, CA CO, 1 mm JT, 0 - 85°, UN, CA CO, 1 mm
			13.0								Drilling Break Drilling Break Drilling Break JT, 0 - 85°, ST, RO, Clay VN
		61			13.20 m: increasing siltstone content				96%		
			14.0								Drilling Break JT, 60°, PL, RO, CA CO, 3 mm PT, 0°, PL, SO, Clay CO, 3 mm
		60			**SILTSTONE**: dark grey, trace fine to medium grained sandstone clasts and siltstone laminations.						
			15.0								Drilling Break
		59							91%		Drilling Break

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4022***
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street, Bringelly*	date started:	***27 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF***
		checked by:	

position: E: 289586; N: 6245762 (GDA2020 MGA) surface elevation: 74.44 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: Water hole diameter : 115 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ		58			**SILTSTONE**: dark grey, trace fine to medium grained sandstone clasts and siltstone laminations. *(continued)*	FR					SM, Clay, 90 mm
											Drilling Break PT, 5°, PL, SO, Clay VN Drilling Break
			17.0						91%		SM, Clay, 100 mm
		57			17.20 m: with siderite nodules up to 20 mm in diameter						
			18.0		Borehole SBT-GW-4022 terminated at 17.90 m						
		56									
			19.0								
		55									
			20.0								
		54									
			21.0								
		53									
			22.0								
		52									
			23.0								
		51									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4022**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date			title:	CORE PHOTOGRAPH SBT-BH-4022
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 2

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4022**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-BH-4022
original	A4		project no: 754-SYDGE292575	Figure 4

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-BH-3006W*
principal:	*Sydney Metro*	sheet:	1 of 6
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Airport Terminal*	date started:	*27 Jun 2022*
		date completed:	*29 Jun 2022*
		logged by:	*FL*
		checked by:	*VN*

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T; HW casing		Not Observed		84				**FILL: Gravelly CLAY**: low to medium plasticity, grey, with fine to medium grained, angular to sub-angular gravel.	<Wp			**FILL** PID: 2.8 ppm; PID: 1.8 ppm
			SPT 5, 12, 14 N*=26	83	1.0			**FILL: CLAY**: high plasticity, orange to brown mottled grey.	=Wp			PID: 1.8 ppm
								FILL: Gravelly SAND: fine to medium grained, grey, fine to medium grained, sub-angular gravel.	D			PID: 1.6 ppm; PID: 1.5 ppm
			SPT 6, 14, 16 N*=30	82	2.0							
							CH	**CLAY**: high plasticity, orange to brown mottled grey.	=Wp	VSt		**RESIDUAL SOIL** PID: 1.3 ppm
			SPT 6, 14, 15 N*=29	81	3.0							
			SPT 8, 11, 18 N*=29	80	4.0							PID: 1.4 ppm
									<Wp			
			SPT 4, 9, 15 N*=24	79	5.0			5.0 to 5.05 m: with high weathered shale gravel, red to brown, angular				PID: 1.4 ppm
			SPT 7, 16, 15 N*=31	78	6.0							PID: 1.4 ppm
			SPT 10, 22, 30 N*=52	77	7.0					H		PID: 1.7 ppm

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	2 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T; HW casing		Not Observed	SPT 7, 15, 26 N*=41	76			CH	**CLAY**: high plasticity, orange to brown mottled grey. *(continued)*	<Wp	H		**RESIDUAL SOIL** PID: 1.7 ppm
			SPT 9, 10, 18 N*=28	75	9.0		CH	**CLAY**: high plasticity, orange to brown to red to brown mottled pale grey, trace of fine grained, sub-angular ironstone gravel and rootlets. Probable residual soil.	=Wp	Fb		PID: 1.8 ppm
			B									HP 350 kPa HP 310 kPa HP 350 kPa
			SPT 7, 10, 15 N*=25	74	10.0							PID: 1.8 ppm
			B				CL	**CLAY**: medium plasticity, red to brown mottled pale brown.	=Wp	VSt		PID: 3.9 ppm
			SPT 3, 7, 14 N*=21	73	11.0							PID: 3 ppm HP 240 kPa HP 250 kPa HP 250 kPa
			SPT 5, 10, 13 N*=23	72	12.0		CH	**CLAY**: high plasticity, orange to brown mottled pale grey.	=Wp			PID: 1.7 ppm HP 400 kPa HP 400 kPa HP >600 kPa
N			SPT 12, 25, 30 N*=55	71	13.0				<Wp	Fb		HP >600 kPa HP >600 kPa HP >600 kPa PID: 3 ppm HP >500 kPa
				70	14.0			Borehole SBT-BH-3006W continued as cored hole				
				69	15.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-3006W.GPJ <<DrawingFile>> 25/11/2022 14:55

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	3 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		76									
			9.0								
		75									
			10.0								
		74									
			11.0								
		73									
			12.0								
		72									
			13.0								
		71			started coring at 13.48m						
HQ	Not Observed				**CLAY**: high plasticity, pale grey to orange to brown, trace of fine to medium grained, sub-angular to subrounded ironstone gravel.	RS		B	0%		
			14.0		**SILTSTONE**: grey to red to brown, distinctly laminated with 5-10%. With fine grained sandstone laminations.	MW - HW		d=0.01 a=0.10	99%		SM, 0°, Clay, 2 mm
		70			**SANDSTONE**: fine grained, pale grey to brown, with 10% siltstone laminations, distinctly laminated.			d=0.02 a=0.10			6x PT, 0 - 5°, PL, SO, CN, 1-5mm
			15.0		**SILTSTONE**: dark grey with orange to brown bands, distinctly laminated. 15.52 to 15.53 m: mudstone clasts, fine to medium grained	MW		d=0.03 a=0.16	95%		0°, PL, 1 mm, carbonaceous lamination 0°, PL, 1 mm, carbonaceous lamination JT, 45°, PL, SL, CN CS, 10°, PL, 10 mm
		69									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-3006W.GPJ <<DrawingFile>> 25/11/2022 14:54

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	4 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	68		15.88 to 16.00 m: sandstone bed, 180mm thick; with siltstone laminations	MW					JT, 45°, PL, SL, CN
				SILTSTONE: grey and dark grey, indistinctly laminated.			d=0.11 a=0.07	100%		
				16.64 to 16.66 m: mudstone clasts, 10mm diameter						JT, 50 - 95°, UN, Fe SN
			17.0							SM, 0°, Fe Clay, 10 mm
		67						91%		JT, 30°, PL, SO, CN
										SM, 0°, Clay, 300 mm
			18.0	**INTERBEDDED SILTSTONE (60%), SANDSTONE (40%)**: dark grey, sandstone is fine grained, grey, pale grey, indistinctly laminated.	SW		d=0.06 a=0.14			
		66					d=0.13 a=0.21			
			19.0				d=0.09 a=0.13	94%		
		65		**SILTSTONE**: dark grey, with 5-10% sandstone laminations.	HW					JT, 60°, PL, SO, CN
			20.0							
		64			MW - SW		d=0.01 a=0.09	100%		
			21.0	21.00 to 21.35 m: mudstone clasts, subangular to subrounded, up to 20mm (5%)						
		63		21.35 to 21.45 m: with sandstone laminations, up to 50mm thick, 0-20°						JT, 20°, PL, SO, CN
				NO CORE: 0.06 m	MW - SW		d=0.08 a=0.15			JT, 20°, PL, SL, CN
			22.0	**SILTSTONE**: dark grey, indistinctly laminated, 0°.			d=0.04 a=0.11			carbonaceous flecks; JT, 30°, PL, SL, CN; carbonaceous flecks
		62		**NO CORE:** 0.00 m	MW - SW			92%		SZ, 0°, 30 mm
				SILTSTONE: dark grey, indistinctly laminated, 0°.						
			23.0	22.81 to 22.84 m: sandstone band: fine grained, grey						
		61		**SILTSTONE**: dark grey, indistinctly laminated, 0-5°, with sandstone laminations, up to 20mm. becoming grey becoming dark grey						SM, 0 - 10°, Clay CN, 15 mm
										JT, 45°, PL, SO, CN; JT, 45°, PL, SO, CN; SM, 10 - 45°, Clay, 20-50mm

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-3006W.GPJ <<DrawingFile>> 25/11/2022 14:54

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	5 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	60		**SILTSTONE**: dark grey, indistinctly laminated, 0-5°, with sandstone laminations, up to 20mm. *(continued)* 24.35 to 24.40 m: mudstone clasts, angular, up to 20mm (40°)	MW - SW		d=0.03 a=0.35	21%		JT, 20°, PL, SO, CN; JT, 30°, PL, SO, CN
		59	25.0	25.57 to 25.62 m: laminated at 30°			d=0.06 a=0.05 d=2.58 a=3.32	21%		PT, 5°, PL, SO, CN; JT, 10°, PL, SO, CN; JT, 40°, PL, SO, VN; SM, Clay, 10 mm; PT, 5°, PL, SL, CN; PT, 5°, PL, SL, CN; PT, 15°, PL, SL, CN; PT, 5°, PL, SL, CN; SM, Clay, 30 mm; JT, 90°, UN, SO, CN, 50 mm; JT, 45°, PL, SL, VN; SM, Clay, 20 mm, at below; JT, 90°, closed; XL Rock; SM, 0 - 45°, Clay, 40 mm; SM, Clay, 110 mm
		58	26.0	**NO CORE:** 1.10 m						
		57	27.0	**SILTSTONE**: dark grey, indistinctly laminated 0-10°. **SANDSTONE**: fine grained, grey, distinctly laminated with dark grey siltstone, up to 2 mm thick 0-15°. **SILTSTONE**: dark grey to grey, indistinctly laminated.	MW - SW		d=0.01 a=0.14	48%		calcrete flecks up to 2mm thick; SM, Clay, 20 mm; 18x JT, 20 - 30°, PL, SL, VN; JT, 50°, PL, SL, VN
		56	28.0							SM, 0°, Clay, 100 mm; JT, 30°, PL, SL, CO; SM, 0°, Clay, 50 mm; JT, 45°, PL, SL, CN
		55	29.0	28.87 to 28.89 m: mudstone clasts, grey, up to 20mm	SW - FR		d=0.32 a=0.96; d=0.05 a=0.35	78%		SM, 0°, Clay, 70 mm; SM, Clay, 10 mm; JT, 20°, PL, SL, VN, 10 mm; JT, 20°, PL, SL, VN; CS, 0°
		54	30.0	**INTERLAMINATED SANDSTONE (60%), SILTSTONE (40%)**: fine grained, grey to pale grey, siltstone is dark grey, distinctly laminated at 0-10°.			d=0.27 a=0.35	66%		
		53	31.0	**SILTSTONE**: grey, dark grey, with 10% sandstone laminations, distinctly laminated at 0-10°.			d=0.19 a=0.19			JT, 40°, UN, SO, VN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-3006W***
principal:	*Sydney Metro*	sheet:	6 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal*	date started:	***27 Jun 2022***
		date completed:	***29 Jun 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289368; N: 6247844 (GDA2020 MGA) surface elevation: 84.35 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water casing diameter : HW

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	52			**SILTSTONE**: grey, dark grey, with 10% sandstone laminations, distinctly laminated at 0-10°. *(continued)*	SW - FR		d=0.06 a=0.30	66%		JT, 20°, PL, SL, VN SM, Clay, 20 mm SM, 5°, CA, 10 mm SM, 30°, CA, 5 mm SM, 30°, CA, 5 mm JT, 45°, PL, SL, CN JT, 30°, PL, SL, CN JT, 30°, PL, SL, CN JT, 30°, PL, SL, CN CS, 30 mm SM, Clay, 60 mm JT, 30°, PL, SL, VN JT, 70°, PL, SL, CN
		51	33.0		33.05 to 33.18 m: mudstone clasts, up to 20mm thick			d=0.23 a=0.35			
		50	34.0		**SANDSTONE**: fine grained, grey, distinctly laminated with dark grey siltstone, up to 10 mm. **SILTSTONE**: dark grey.			a=0.27	88%		SM, 20°, Clay JT, 20°, PL, SL, CN
		49	35.0					a=0.05	100%		
		48	36.0		Borehole SBT-BH-3006W terminated at 36.10 m Target depth						
		47	37.0					d=0.09 a=0.32			
		46	38.0								
		45	39.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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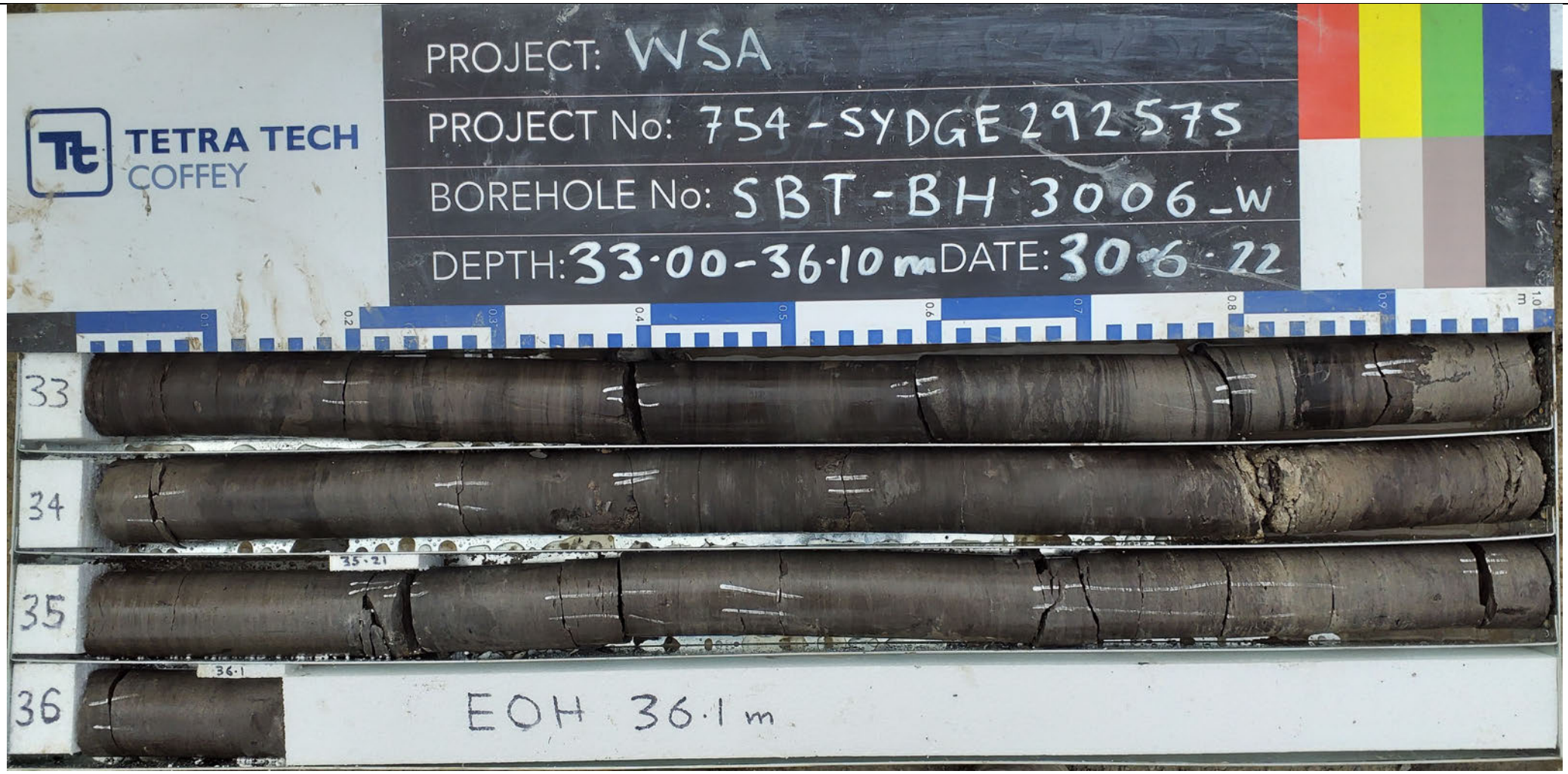
drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-GW-3006W**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-GW-3006W**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-GW-3006W**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-GW-3006W
original	A4		project no: 754-SYDGE292575	Figure 4

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-GW-3006W
original	A4		project no: 754-SYDGE292575	Figure 5



drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-GW-3006W
original	A4		project no: 754-SYDGE292575	Figure 6

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	1 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, C		Not Observed	DS + E				CH-MH	**TOPSOIL: Silty CLAY**: low plasticity, dark brown, trace of roots.	>Wp	VSt		**TOPSOIL**
								Silty CLAY: high plasticity, red-brown, trace fine sand and root fibres. 0.3 m: becoming brown				**RESIDUAL SOIL** PID: 11.9 ppm
								0.8 m: becoming brown mottled grey				
			E		1.0							PID: 19.1 ppm
			SPT 4, 9, 13 N*=22				CH	**CLAY**: high plasticity, pale brown, mottled pale grey.	<Wp			
			E		2.0							PID: 10.9 ppm
			SPT 5, 5, 4/30mm N*=R							H		
					3.0			Borehole SBT-BH-4008 continued as cored hole				
					4.0							
					5.0							
					6.0							
					7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	2 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
1.0						
2.0	started coring at 2.65m					
3.0	**Silty CLAY**: high plasticity, grey mottled orange, trace fine gravels, (extremely weathered siltstone).	RS				
	SILTSTONE: dark grey, red-brown, distinctly bedded at 0-5°, wtih 5% occasional sandstone laminations.	HW		88%		JT, 60°, CU, RO, Fe SN - Clay CO; JT, 60°, PL, RO, Fe SN; SM, Clay, 30 mm; SM, Clay, 80 mm; SM, Clay, 120 mm; SM, Clay, 50 mm
4.0	4.00 to 6.00 m: becoming dark grey, brown		d=0.14 a=0.13	76%		PT, 0°, PL, RO, Clay CO; SM, Clay, 20 mm
5.0						SM, Clay, 50 mm; PT, 0°, PL, RO, Fe SN; SM, Clay, 90 mm
			d=0.01 a=0.02			SM, Clay, 40 mm; JT, 45°, PL, RO, Clay CO
6.0		MW				PT, 10°, PL, RO, CN
			d=0.05 a=0.07	94%		PT, 0°, PL, RO, Fe SN; PT, 0°, PL, RO, X CO; SM, Clay, 30 mm; PT, 0°, PL, RO, Fe SN; PT, 15°, PL, RO, Fe SN
7.0		SW - FR	d=0.10 a=0.11			

Defects are: PT, 0 - 15°, PL, RO, Clay CO, unless otherwise described

HQ — Not Observed

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	3 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular	general
	INTERLAMINATED SANDSTONE (60%) AND SILTSTONE (40%): sandstone is fine grained and pale grey, siltstone is dark grey, distinctly laminated at 0-10° with occasional siderite nodules. *(continued)* 8.44 to 8.64 m: band of siltstone, dark grey	SW - FR		d=0.20 a=0.59	94%			
9.0	**SILTSTONE**: dark grey, distinctly bedded at 0-5°, with occassional siderite nodules and carbonaceous veins and clay seams.						SM, Clay, 50 mm	
10.0				d=0.29 a=0.20 d=0.34 a=0.22				
					91%		PT, 10°, PL, RO, X CO	
							JT, 60°, PL, RO, CN	
11.0	11.05 to 11.55 m: becoming pale grey	HW					SM, Clay, 40 mm	
	11.33 to 11.53 m: clay band, due to vertical joint, high plasticity, pale grey						JT, 55°, PL, RO, Clay CO	
							SM, Clay, 70 mm	
		SW - FR					JT, 45°, CU, RO, CN	
12.0				d=0.14 a=0.20 d=0.08 a=0.15				
							JT, 50°, PL, RO, CN	
13.0							SM, Clay, 40 mm	
							JT, 30°, CU, RO, Clay CO	
	13.58 to 13.75 m: with 10% fine grained sandstone lamination	FR			96%		JT, 25°, PL, RO, CN	
14.0	**INTERLAMINATED SANDSTONE (75%) AND SILTSTONE (25%)**: sandstone is fine grained and pale grey, siltstone is dark grey, distinctly cross-laminated at 0-10°.			d=1.84 a=0.76			JT, 80°, PL, RO, CN	
	SANDSTONE: fine to medium grained, pale grey, with 5-10% dark grey siltstone laminations.							
15.0				d=4.47 a=3.97				
				d=0.71 a=1.20	100%		PT, 10°, PL, RO, CN	

Defects are: PT, 0 - 15°, PL, RO, Clay CO, unless otherwise described

drilling method: HQ; water: Not Observed

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	4 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular	general
HQ	Not Observed				**SANDSTONE**: fine to medium grained, pale grey, with 5-10% dark grey siltstone laminations. *(continued)* 16.04 to 16.24 m: band of dark grey siltstone, with siderite nodules	FR		d=0.63 a=1.70				Defects are: PT, 0 - 15°, PL, RO, Clay CO, unless otherwise described
			17.0					d=0.49 a=0.87	100%		PT, 15°, PL, RO, X SN	
					17.24 to 17.30 m: with 30% carbonaceous laminations						JT, 75 - 90°, CU, tight	
					From 17.60 m: becoming pale brown						JT, 35°, PL, RO, CA SN	
			18.0								JT, 60°, PL, RO, CA SN	
					From 18.35 m: becoming pale grey 18.47 to 22.11 m: 20% carbonaceous laminations						JT, 60°, UN, tight	
											PT, 0°, PL, RO, X SN	
											PT, 5°, PL, RO, X SN	
			19.0					d=0.76 a=0.90				
			20.0					d=2.30 a=2.06	100%		PT, 10°, PL, RO, CN	
			21.0					d=2.28 a=2.59			PT, 0°, PL, RO, X CO	
			22.0					d=0.08 a=1.13			PT, 0°, PL, RO, X SN	
											PT, 0°, PL, RO, X SN	
											PT, 0°, PL, RO, X SN	
								d=1.75 a=2.24	100%			
			23.0								PT, 10°, PL, RO, X SN	
					INTERBEDDED SANDSTONE (50%) AND SILTSTONE (50%): sandstone is fine grained and pale grey, siltstone is dark grey, distinctly laminated.			d=0.43			PT, 10°, PL, RO, X SN	

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	5 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

depth (m)	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular	general
	SILTSTONE: dark grey, pale brown, indistinctly laminated, with occassional siderite nodules and 10% fine grained sandstone. *(continued)* 24.00 to 24.12 m: with fine grained sandsotne (20%) laminations 24.76 to 24.82 m: fine grained sandstone band	FR		a=1.06	100%			
25.0				d=0.09 a=0.43			JT, 45°, PL, RO, CN	
26.0	**INTERLAMINATED SILTSTONE (60%) AND SANDSTONE (40%)**: siltstone is dark grey, sandstone is fine grained and pale grey, indistinctly laminated at 0-10°. 26.40 to 26.62 m: band of fine grained sandstone			d=0.59 a=0.53	100%			
27.0	**SILTSTONE**: dark grey, indistinctly bedded at 0-5°, with 10% fine grained sandstone laminations. 26.90 to 27.02 m: band of interlaminated siltstone (50%) and sandstone (50%)			d=0.70 a=0.59				
28.0				d=0.07 a=0.64			PT, 0°, PL, RO, CN	
29.0				d=0.15 a=0.18	100%			
				d=0.27 a=0.63			JT, 20°, PL, RO, CN	
30.0	**INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%)**: sandstone is fine grained and pale grey, siltstone is dark grey, distinctly laminated at 0-10°.							
31.0	**SILTSTONE**: dark grey, grey, indistinctly bedded at 0-15°, with 10% fine grained sandstone laminations.			d=0.63 a=1.47	100%		PT, 0°, PL, RO, CA CO PT, 0°, PL, RO, CA CO	

method: HQ | water: Not Observed

Defects are: PT, 0 - 15°, PL, RO, Clay CO, unless otherwise described

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4008***
principal:	*Sydney Metro*	sheet:	6 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	***28 Oct 2022***
		date completed:	***02 Nov 2022***
		logged by:	***DS/PD***
		checked by:	***VN***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					**INTERLAMINATED SANDSTONE (70%), SILTSTONE (30%)**: fine grained, grey, siltstone is dark grey, distinctly laminated at 0-10°. *(continued)*	FR		d=0.92 a=1.56	100%		
					Borehole SBT-BH-4008 terminated at 32.19 m						
			33.0								
			34.0								
			35.0								
			36.0								
			37.0								
			38.0								
			39.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-BH-4008.GPJ <<DrawingFile>> 29/11/2022 10:59

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	*SBT-BH-4008*
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*223 Badgerys Creek Road, Aerotropolis, NSW*	date started:	*28 Oct 2022*
		date completed:	*02 Nov 2022*
		logged by:	*DS/PD*
		checked by:	*VN*

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

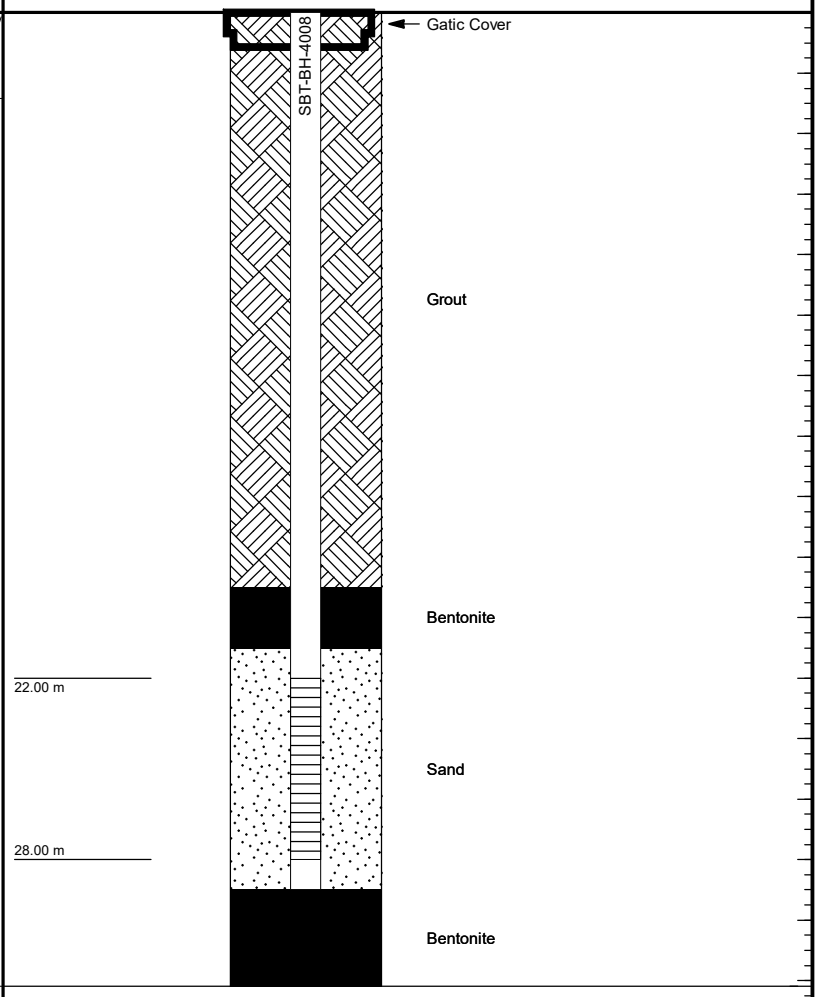
equipment type: DB520/ND004, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, C	Not Observable				**TOPSOIL**
					RESIDUAL SOIL
HQ					**BEDROCK**
			8		
			16		
			24		
			32		

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-BH-4008	Standpipe piezometer			1.00 m	29.00 m				

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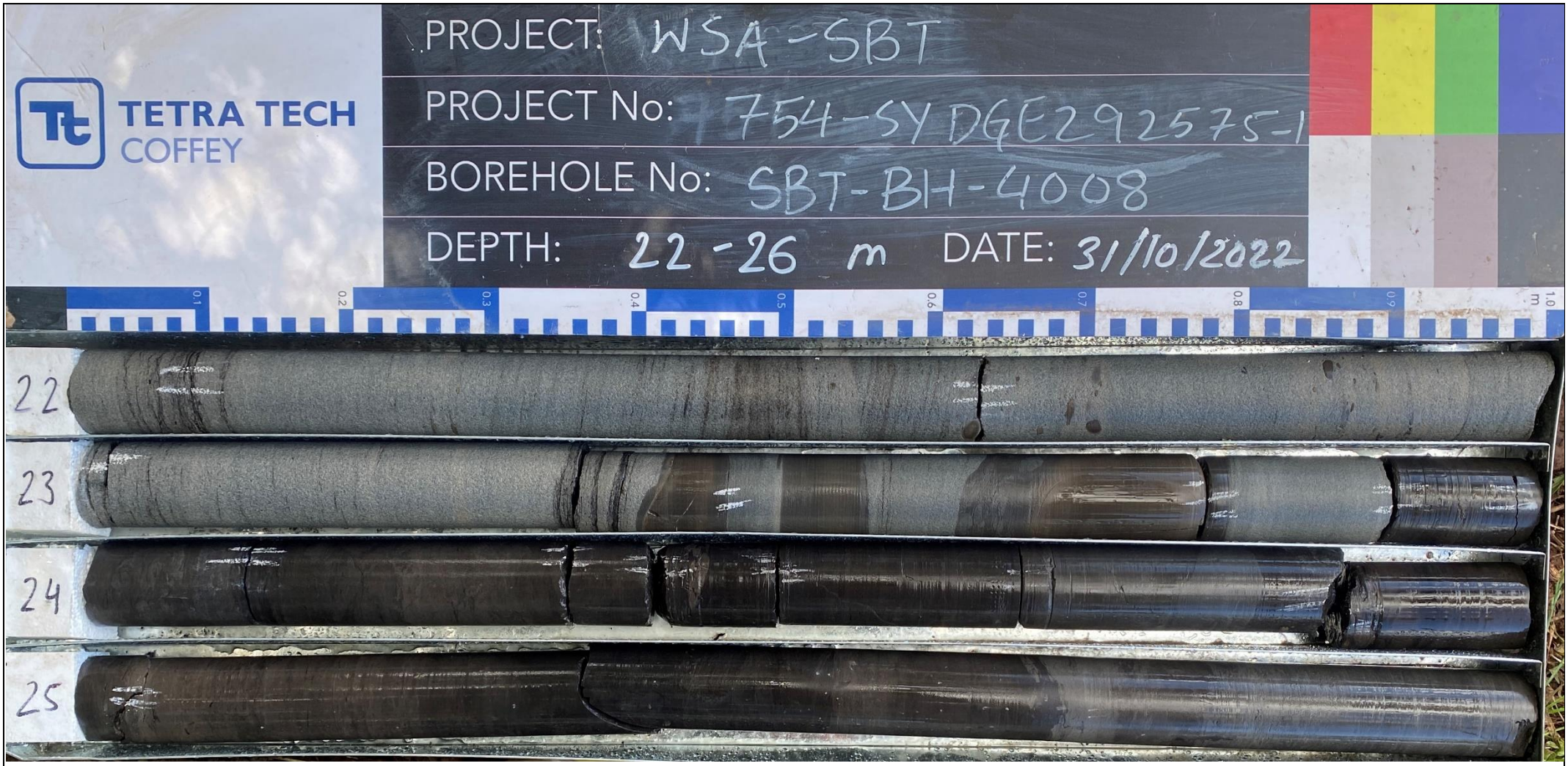
drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

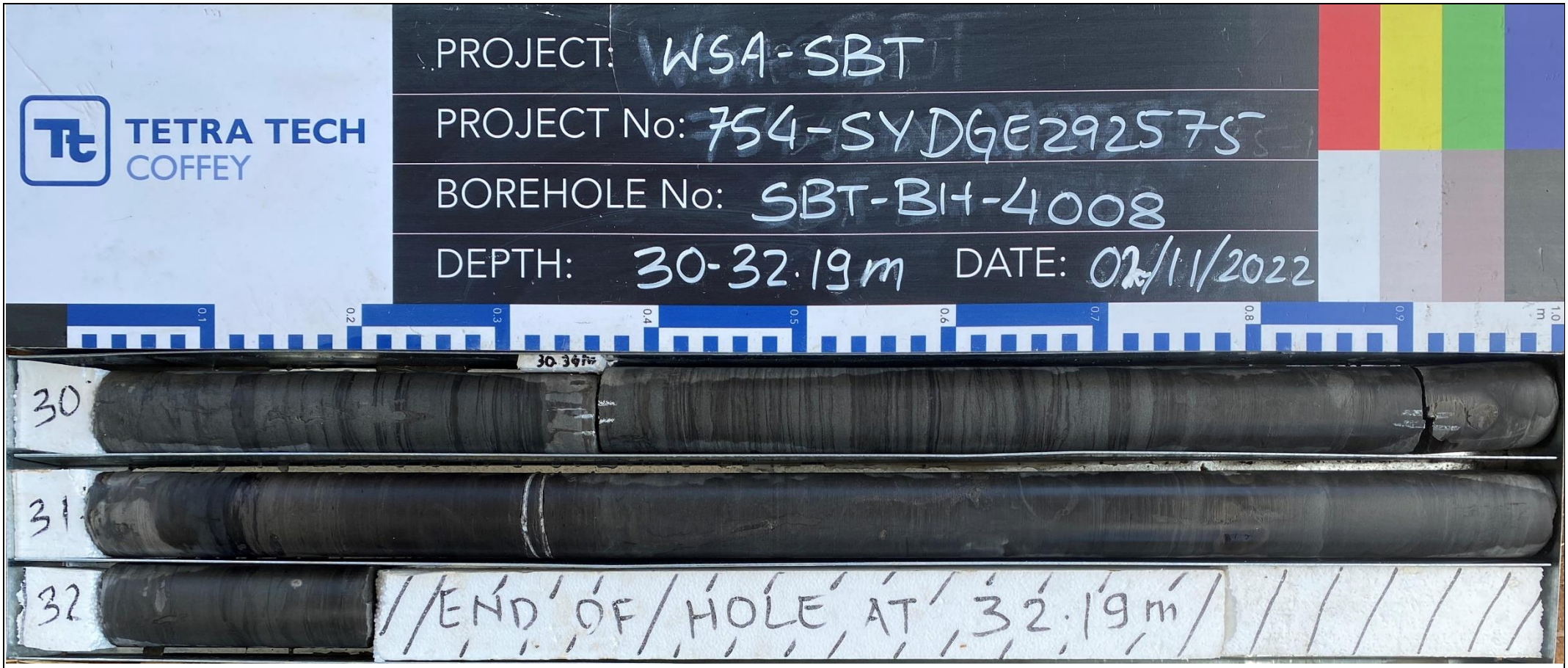
drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 4**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 6**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
original	**A4**		project no: **754-SYDGE292575**	**Figure 7**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4008**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 8**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	1 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
HA, PVC casing			E					**ASPHALT**.	D	F		**ASPHALT** PID: 0.4 ppm
			E					**GRAVELLY SAND**: fine to medium grained, brown, gravels are sub-angular to sub-rounded, trace roots and clay.	D			**FILL** PID: 0.5 ppm
			E					**CLAY**: high plasticity, red to brown, trace of fine sand. trace fine gravels appearing, becoming grey, mottled brown	<Wp			**NATURAL** PID: 0.9 ppm PID: 0.6 ppm
AD/T			E SPT 2, 4, 5 N*=9		1.0							**RESIDUAL?** HP 190 kPa HP 220 kPa HP 200 kPa HP 320 kPa PID: 0.4 ppm
			E SPT 7, 10, 12 N*=22		2.0			**CLAY**: high plasticity, grey, mottled red brown, trace sand rock texture observed.	<Wp	St - VSt	>600 >600	**RESIDUAL** HP 420 kPa HP 600 kPa HP 600 kPa HP 310 kPa
N					3.0			Borehole SBT-BH-4010 continued as cored hole				
					4.0							
					5.0							
					6.0							
					7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	2 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
			1.0 2.0		started coring at 2.60m						
HQ			3.0		high plasticity.	XW					
					SILTSTONE: grey, mottled red, distinctly bedded at 0-5°. pale grey to orange brown mottles	HW			85%		SM, 0 - 5°, Clay, 65 mm SM, 0 - 5°, Clay, 30 mm PT, 5°, PL, RO, Clay CO SM, 80°, Clay, 290 mm PT, 5°, PL, RO, Clay CO SM, 5°, Clay, 40 mm
			4.0		**SILTSTONE**: dark grey, indistinctly bedded at 5°, trace iron indurated gravels.	HW					
					NO CORE: 0.08 m become grey	HW					
			5.0		**INTERBEDDED SILTSTONE (70%) AND SANDSTONE (30%)**: siltstone dark grey, sandstone: fine grained, brown. Indistinctly bedded at 0-10°, with ironstone gravels. iron indurated cobble interlaminated siltstone (60%) and sandstone (40%) Siltstone: grey. Sandstone: fine grained, grey, mottled orange brown distinctly laminated at 0-5°	MW			77%		PT, 10°, CU, RO, Fe SN JT, 55°, PL, RO, Fe SN PT, 0°, PL, RO, Fe SN PT, 0°, PL, RO, Clay CO PT, 0°, PL, RO, Fe SN PT, 80°, PL, RO, Fe SN PT, 5°, PL, RO, Clay VN PT, 70°, PL, RO, Clay VN PT, 5°, PL, RO, Clay CO
			6.0								SM, 0 - 10°, Clay, 80 mm PT, 10°, PL, RO, Clay CO PT, 5°, PL, RO, Clay CO PT, 5°, PL, RO, Clay CO
			7.0		**SILTSTONE**: grey, mottled orange, indistinctly bedded at 0-10°. becmoing dark grey with grey weathered bands orange to red sandstone bands appearing	HW			95%		PT, 15°, PL, RO, Clay VN JT, 50°, PL, RO, Fe SN PT ?, 10°, PL, RO, Clay CO PT, 10°, PL, RO, Clay CO PT, 10°, CU, RO, Fe SN PT, 10°, IR, RO, Fe SN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	3 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					**SANDSTONE**: fine to medium grained, pale grey, mottled red brown, massive with iron indurated mottling and (white bubbling?). *(continued)*	HW					
					becoming a grey mottled orange	SW - MW			95%		PT, 5°, PL, RO, Fe SN
					thing carbonaceous banding						PT, 0°, PL, RO, Fe
					becoming pale grey, distinctly cross-bedded at 0-10°						JT, 15°, PL, RO, Fe
			9.0		becoming pale brown						
					siltstone bands	MW					PT, 0°, IR, RO, CA CO, Carbonite infill
					SILTSTONE: dark grey, distinctly bedded at 0-10°.						
					iron indurated cobbles						PT, 15°, PL, RO, Clay CO
					grey, mottled orange brown	SW - MW					PT, 10°, PL, RO, Fe SN; PT, 10°, PL, RO, Fe SN
			10.0						99%		
					grey siltstone band						PT, 5°, PL, RO, Clay CO
			11.0								
					grey cobbles (possible sandstone)						PT, 10°, CU, RO, Clay VN
					INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%): sandstone: fine grained, grey. siltstone: dark grey. distinctly cross laminated at 0-15°.	SW					PT, 15°, PL, RO, Clay VN
			12.0		siltstone clast 50% siltstone and 50% sandstone						
			13.0		siltstone clast						PT, 5°, PL, RO, CN; JT, 55°, PL, RO, CN; PT, 5°, PL, RO, CN; JT, 75°, PL, RO, CN; PT, 0°, PL, RO, Clay VN; PT, 10°, PL, RO, CN; PT, 5°, IR, RO, Clay VN
					SILTSTONE: dark grey, distinctly bedded at 0-10°.	SW			97%		
			14.0		fine grained sandstone clasts						PT, 5°, IR, RO, Clay VN
					siltstone and sandstone clast						
					thin fine grained sandstone bands						
			15.0		band laminated with sandstone						JT, 20°, PL, RO, Clay VN, 27 mm, 14.88-15.15
					band laminated with sandstone						
	30-40% loss				calcute indurated into joint				97%		PT, 0°, PL, RO, CN; JT, 85°, PL, RO, CA SN; PT, 5°, PL, RO, CA SN; PT, 0°, PL, RO, CA SN
					calcite band; calcite band	SW					

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	4 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					**SANDSTONE**: medium grained, grey, indistinctly bedded at 5-10°. *(continued)*	SW					PT, 10°, PL, RO, Clay VN
			17.0		cabonaceous (?) laminate				97%		
					siltstone clast	SW					
					SILTSTONE: dark grey, indistinctly bedded at 0-5°.						PT, 15°, IR, RO, CN
			18.0		interlaminated sandstones silstone gravel						
			19.0								PT, 5°, CU, RO, Clay VN PT, 10°, PL, RO, Clay VN PT, 5°, IR, RO, Carbonaceas infill (?)
					sandstone bands up to 5mm width	SW					
					SANDSTONE: fine grained, grey, indistinctly bedded at 0-5°, with some siltstone (laminate?).				96%		PT, 5°, PL, RO, CN
					SILTSTONE: grey, indistinctly bedded at 0-5°.	MW					
			20.0		becoming dark grey						PT, 5°, PL, RO, Clay VN
											PT, 10°, PL, RO, Clay CO
			21.0								
					thin calcite bands up to 3mm	MW					PT, 5°, PL, RO, Crushed rock CS, 0 - 10°, Crushed rock and calcite
					sandstone band						PT, 0°, PL, RO, Clay VN PT, 0°, PL, RO, Clay CO
			22.0								CS, 10°, Crushed rock
						SW			95%		
			23.0		interbedded dark grey bands						PT, 5°, IR, RO, Clay VN
					INTERLAMINATED SILTSTONE (90%) AND SANDSTONE (10%): siltstone: dark grey. sandstone: fine grained, grey. distinctly laminated at 0-10°.	SW					
					sandstone gravel band (possible breccia?)	SW					

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	5 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ			25.0		**SILTSTONE**: dark grey, distinctly bedded at 0-5°. *(continued)* calcite bands	SW			100%		PT, 5°, PL, RO, Clay CO PT, 0°, PL, RO, Clay VN JT, 50°, PL, SO, Clay VN JT, 50°, PL, SO, CN
			26.0		shale brecciated band sandstone gravels, slightly weathered						JT, 45°, PL, SO, Clay VN
			27.0		**SANDSTONE**: fine grained, grey, with thin siltstone wavy(?) bands, indistinctly bedded at 0-5°. siltstone band becoming interbedded with siltstone, 80% sandstone, 20% siltstone at 0-5°	SW - FR					PT, 5°, CU, RO, Clay VN
			28.0		**SILTSTONE**: dark grey, distinctly bedded at 0-5°, with some sandstone laminate and bands. sandstone induration (?) wavy appearance sandstone band 5mm	SW - FR			100%		PT, 5°, RO, Clay VN
			29.0		sandstone gravel 30mm interbedded with sandstone at 0-10° (65% siltstone and 35% sandstone)						PT, 10°, UN, RO, CN CS, 10°, Crushed rock, 15 mm PT, 10°, PL, RO, Clay CO PT, 5°, PL, RO, Clay CO
			30.0		**SILTSTONE**: dark grey, indistinctly bedded at 0-5°. sandstone gravels with sandstone bands at 0-20°	MW - SW					JT, 75°, PL, RO, CN PT, 5°, PL, RO, Clay VN
			31.0		sandstone gravel, medium grained **SANDSTONE**: fine grained, grey, distinctly bedded at 0-10° with siltstone laminations. thin calcite bands calcite band interlaminated band				140%		PT, 15°, CU, RO, CA SN JT, 80°, CU, RO, CN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	6 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ			33.0		**SANDSTONE**: medium grained, grey, indistinctly bedded at 0-10°. *(continued)* siltstone banding dark grey, fine grained band trace thin siltstone lenses siltstone bands shale breccia	MW - SW			100%		JT, 60°, PL, RO, CN PT, 0°, PL, RO, CN
			34.0		**SILTSTONE**: dark grey, distinctly bedded at 0-5°.						PT, 5°, PL, RO, CA SN
					Borehole SBT-BH-4010 terminated at 34.00 m Target depth						
			35.0								
			36.0								
			37.0								
			38.0								
			39.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-BH-4010***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Badgerys Creek Rd*	date started:	***01 Jun 2022***
		date completed:	***03 Jun 2022***
		logged by:	***MR***
		checked by:	

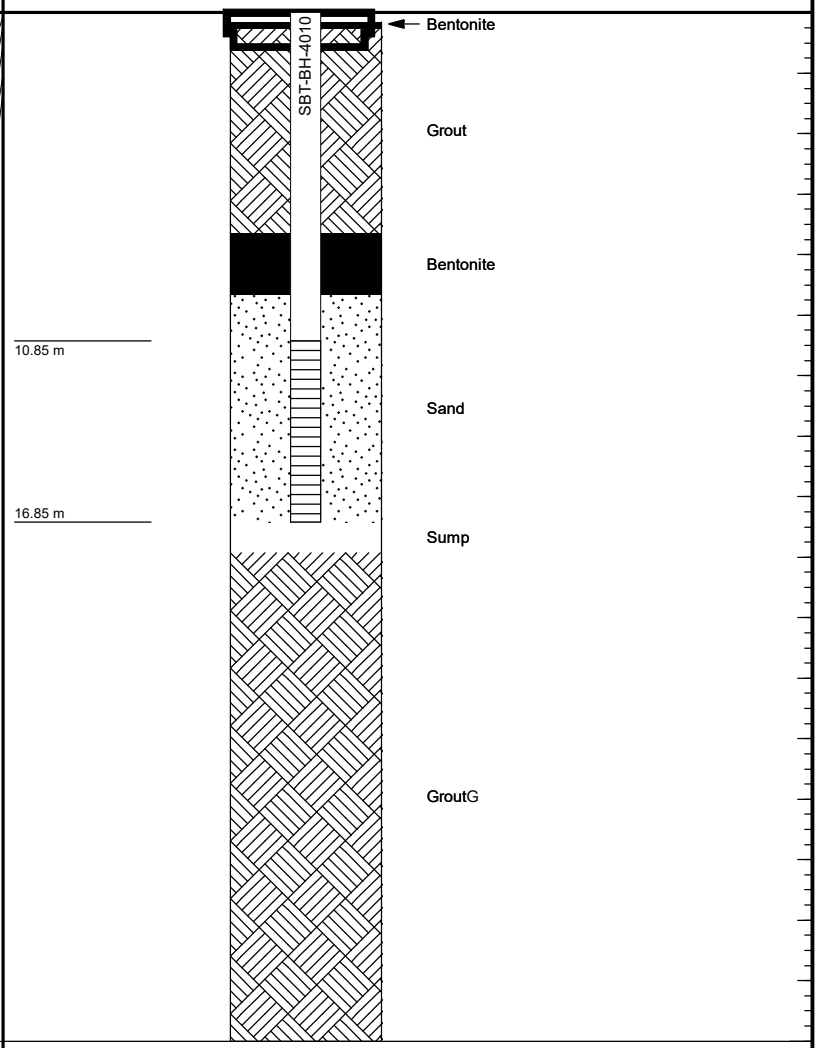
position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

equipment type: Hanjin DB8, Track mounted | drilling fluid: | casing diameter : PVC

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover | bore construction license:
pvc type: | drilling company:
sand type: | driller:
grout type: | driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
HA, AD/T, PVC casing					ASPHALT
					FILL
					NATURAL
					RESIDUAL?
					RESIDUAL
			8		
			16		
			24		
HQ, N			32		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-BH-4010	Standpipe piezometer				16.85 m				

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF PIEZOMETER ONE PAGE SUMMARY SBT-BH-4010.GPJ <<DrawingFile>> 14-07-2022 13:10

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-CM-1020***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT- CM-1020*	project no.	***754-SYDGE292575***
location:	*11 Queen Street*	date started:	***09 Jun 2022***
		date completed:	***09 Jun 2022***
		logged by:	***J.Y***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
HA			B+J+P					**FILL: Gravelly SAND**: fine to medium grained, sub-angular to angular, dark brown, asphalt pieces.	D			**FILL** PID: 1.7 ppm
			J+P				CL	**Sandy CLAY**: medium plasticity, pale red/ dark brown, fine to medium sand.		F		**RESIDUAL SOIL** PID: 1.1 ppm
					1.0							PID: 1 ppm
					2.0							
					3.0							
					4.0		CH	**Sandy CLAY**: high plasticity, pale red/ pale brown, fine to medium sand.	M			
SS					5.0							
					6.0							
					7.0							
									W			

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-CM-1020.GPJ <<DrawingFile>> 27/10/2022 14:42

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-CM-1020*
principal:	*Sydney Metro*	sheet:	2 of 2
project:	*WSA SBT- CM-1020*	project no.	*754-SYDGE292575*
location:	*11 Queen Street*	date started:	*09 Jun 2022*
		date completed:	*09 Jun 2022*
		logged by:	*J.Y*
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 100 mm

drilling information						material substance							
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
SS							CH	**Sandy CLAY**: high plasticity, pale red/ pale brown, fine to medium sand. *(continued)* 8.1 m: becoming pale grey/ dark grey	W	F		**RESIDUAL SOIL**
					9.0							
					10.0							
					11.0							
					12.0							
								Borehole SBT-CM-1020 terminated at 12.5 m				
					13.0							
					14.0							
					15.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-CM-1020.GPJ <<DrawingFile>> 27/10/2022 14:42

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-CM-1020***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT- CM-1020*	project no.	***754-SYDGE292575***
location:	*11 Queen Street*	date started:	***09 Jun 2022***
		date completed:	***09 Jun 2022***
		logged by:	***J.Y***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

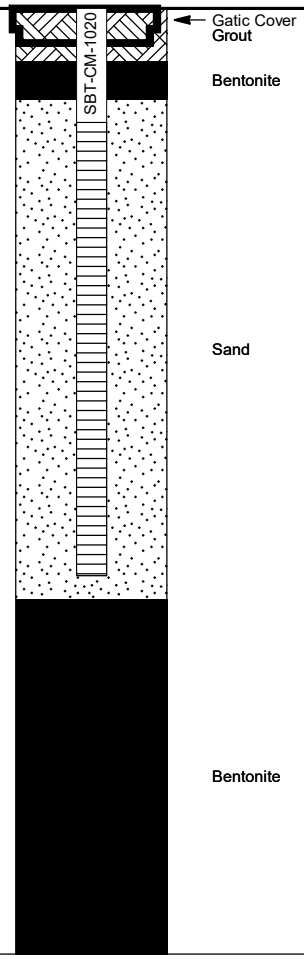
equipment type: Geoprobe, Track mounted | drilling fluid: | hole diameter : 100 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
HA			0		**FILL**
					RESIDUAL SOIL
SS			1		
			2		
			3		
			4		
			5		
			6		
			7		
			8		
			9		
			10		
			11		
			12		
			13		
			14		
			15		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-CM-1020	Gatic Cover piezometer				7.50 m				

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF PIEZOMETER ONE PAGE SUMMARY SBT-CM-1020.GPJ <<DrawingFile>> 27/10/2022 14:45

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-CM-1030***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Gipps St RECREATION PRECINCT*	date started:	***17 Aug 2022***
		date completed:	***17 Aug 2022***
		logged by:	***JE***
		checked by:	

position: E: 291923; N: 6260911 (GDA2020 MGA) surface elevation: 36.92 m (AHD) angle from horizontal: 90°

drill model: Geoprobe 300 drilling fluid: Water hole diameter : 120 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS		Not Encountered	E				CL	**TOPSOIL: SILT**: low liquid limit, dark brown.	~Wp	St		**TOPSOIL**
								Silty CLAY: medium plasticity, red-brown grading to grey mottled red-brown.				**RESIDUAL SOIL**
			E	36	1.0							
			SPT 3, 3, 5 N*=8						<Wp			HP =280 kPa HP =470 kPa
			E	35	2.0							
			SPT 3, 4, 7 N*=11									HP >400 kPa
			E	34	3.0							
								3.2 m: Indurated ironstone bands				
			E	33	4.0							
			SPT 3, 7, 7 N*=14									HP =410 kPa >>HP >600 kPa
			E	32	5.0							
			SPT 2, 4, 8 N*=12									HP >500 kPa
			E	31	6.0							HP <=400 kPa
								SHALE: yellow brown, with clay band, extremely weathered, estimated very low to low strength.				**EXTREMELY WEATHERED SHALE**
			E	30	7.0							
				29				Borehole SBT-CM-1030 terminated at 7.0 m Target depth				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-CM-1030.GPJ <<DrawingFile>> 24/03/2023 14:11

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	1 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, CASING, N		Not Observed		49				**FILL: CLAY**: high plasticity, brown to dark brown, with fine to medium SAND, with fine to coarse, sub-angular to sub-rounded GRAVELS.				**FILL**
							CH	**CLAY**: high plasticity, red mottled orange, trace fine, sub-angular to sub-rounded GRAVELS.	>Wp	VSt - H		**RESIDUAL SOIL**
			SPT 4, 4, 7 N*=11	48	1.0						HP 300 kPa HP 350 kPa HP 340 kPa	
				47	2.0			1.6 to 2.0 m: Returning fine to medium, sub-angular to sub-rounded gravels				
			SPT 9, 9, 10 N*=19	46	3.0		CH	**CLAY**: high plasticity, pale grey mottled red-orange, trace fine to medium, sub-angular to sub-rounded GRAVELS.	<Wp	Fb	>HP >600 kPa >HP >600 kPa >HP >600 kPa	
			SPT 12, 13, 27 N*=40	45	4.0							
				44	5.0		CH	**Silty CLAY**: high plasticity, pale grey mottled red and orange, rock texture evident (extremely weathered SILTSTONE).		Fb		**EXTREMELY WEATHERED SILTSTONE**
				43	6.0			Borehole SBT-GW-1001 continued as cored hole				
				42	7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:20

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	2 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance							rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		49									
		48	1.0								
		47	2.0								
		46	3.0								
		45	4.0								
		44	5.0		started coring at 5.80m						
HQ	Not Observed	43	6.0		**Silty CLAY**: high plasticity, pale grey mottled red to pale brown, with ironstone bands, rock texture evident (extremely weathered SILTSTONE).	XW	X<<	a=0.02			
		42	7.0				⊠<<	d=0.02 a=0.03	0%		

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	3 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	41		**Silty CLAY**: high plasticity, pale grey mottled red to pale brown, with ironstone bands, rock texture evident (extremely weathered SILTSTONE). *(continued)*	XW			0%		
		40	9.0	**SILTSTONE**: grey mottled brown, indistinctly bedded at 0-5°.	HW		d=0.03 a=0.02			SM, Clay, 30 mm; JT, 50°, PL, SO, VN
				9.30 m: Ironstone nodes up to 30 mm			d=0.03 a=0.03	96%		JT, 80°, PL, SO, VN; JT, 30°, PL, SO, VN; SM, 50°, Clay, 50 mm; JT, 60°, PL, SO, VN; PT, 0°, PL, SO, Clay CO, 3 mm; JT, 50°, PL, RO, VN; JT, 60°, PL, SO, Closed
		39	10.0	10.10 to 10.20 m: Ironstone bands up to 10 mm thick						
		38	11.0				d=0.08 a=0.03	96%		JT, 60°, PL, SO; JT, 30°, PL, VN; SM, Clay, 50 mm
		37	12.0				d=0.04 a=0.04			PT, 15°, PL, SO, VN; PT, 0°, PL, SO, VN; Clasm; PT, 5°, PL, SO, VN
		36	13.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: SANDSTONE is fine to medium grained and grey, SILTSTONE is dark grey, distinctly laminated at 0-5°.	SW		d=0.06 a=0.07	92%		PT, 5°, PL, SO, VN; SM, Clay
		35	14.0				d=0.24 a=0.20			
					MW - HW					PT, 0°, PL, SO, Clay CO, 3 mm; SM PT, 5°, PL, SO, Clay, 4 mm; SM, Clay, 50 mm; SM, Clay, 60 mm
		34	15.0	15.15 to 15.17 m: Ironstone band, 20 mm; 15.25 to 15.50 m: SANDSTONE band, fine grained, light grey, silty laminations	SW		d=0.14 a=0.11 d=0.26 a=0.26	89%		SM, Clay, 20 mm; SM, Clay, 10 mm; SM, Clay, 10 mm
				SILTSTONE: dark grey, indistinctly laminated 0-5°, with 5% fine grained SANDSTONE phases and bands.						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	4 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	33		**SILTSTONE**: dark grey, indistinctly laminated 0-5°, with 5% fine grained SANDSTONE phases and bands. *(continued)*	SW		d=0.13 a=0.12	89%		JT, 50°, PL, SO, VN; SM, Clay, 10 mm
		32	17.0				a=0.09			JT, 45°, PL, SO, CN
								92%		PT, 5°, PL, SO, VN; PT, 0°, PL, SO, VN
		31	18.0							
		30	19.0				d=0.24 a=0.23; d=0.07 a=0.14	96%		PT, 15°, PL, SO, CN, Closed; PT, 10°, IR, SO, CN; PT, 5°, IR, SO, CN; JT, 40°, PL, SO, CN; SM, Clay, 100 mm; SM, Clay, 10 mm; PT, 0°, PL, SO, Clay CO, 3 mm; PT, 0°, PL, SO, VN
		29	20.0		FR		d=0.36 a=0.37			PT, 0°, PL, RO, CN
		28	21.0	21.60 to 21.90 m: SANDSTONE laminations						
		27	22.0	**INTERBEDDED SILTSTONE (80%) AND SANDSTONE (20%)**: SILTSTONE is dark grey, SANDSTONE is fine grained and pale grey. 22.50 to 22.68 m: Healed calcite veining 22.50 to 22.70 m: fine SANDSTONE, with distinct silty laminations			d=0.11 a=0.37; d=0.10 a=0.29	97%		PT, 0°, PL, RO, CA CO, 1 mm; PT, 0°, PL, RO, CA CO, 1 mm
		26	23.0				d=0.18 a=0.26			PT, 20°, PL, SO, CN, Closed; PT, 5°, PL, SO, CN, Closed; JT, 40°, PL, SO, VN; JT, 60°, PL, SO, VN; PT, 0°, PL, SO, VN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	5 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	25			FR			100%		
				SILTSTONE: dark grey, indistinctly laminated at 0-5°. 24.60 to 24.80 m: With fine, rounded shale breccia nodes			d=0.25 a=0.27			At 23.90-24.60 m: Sample broken while drilling
		24	25.0					100%		
							d=0.91 a=0.63			
		23	26.0	**INTERLAMINATED SILTSTONE (80%) AND SANDSTONE (20%)**: SILTSTONE is dark grey, SANDSTONE is pale grey, distinctly laminated at 0-10°.						
							d=0.21 a=0.79			
		22	27.0							
				SANDSTONE: fine grained, massive, pale grey, with silty laminations clasts.			d=0.98 a=0.81			PT, 5°, PL, RO, SN
		21	28.0	**SILTSTONE**: dark grey, distinctly laminated 0-5°, with occasional SANDSTONE laminations up to 10%. 28.17 m: 5% pale grey, fine grained SANDSTONE 28.50 m: pale brown SANDSTONE clasts				93%		PT, 0°, PL, SO, VN; PT, 0°, PL, SO, VN; PT, 15°, PL, SN
		20	29.0				d=0.39 a=0.31			PT, 0°, PL, SO, CN; JT, 25°, PL, SO, CN
				INTERBEDDED SILTSTONE (80%) AND SANDSTONE (20%): SILTSTONE is dark grey, SANDSTONE is fine grained and pale grey.						JT, 20°, IR, SO, CN
		19	30.0				d=0.32 a=0.35			
							d=0.37 a=0.53	93%		
		18	31.0				d=0.35 a=0.54			
				31.45 to 31.49 m: SANDSTONE band, fine to medium grained, pale grey						PT, 0°, PL, SO, CN; JT, 25°, PL, SO, CN; JT, 25°, PL, SO, CN; JT; PT, 0°, PL, SO, VN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	6 of 6
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

drill model: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 X = axial; O = diametral VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	17			**INTERBEDDED SILTSTONE (80%) AND SANDSTONE (20%)**: SILTSTONE is dark grey, SANDSTONE is fine grained and pale grey. *(continued)*	FR		d=0.31 a=0.59	93%		PT, 0°, PL, SO, VN PT, 0°, PL, SO, VN
		16	33.0		33.40 to 33.80 m: interlaminated			d=0.10 a=0.20			JT, 0°, PL, SO, VN
		15	34.0					d=0.15 a=0.23	86%		PT, 5°, IR, RO, CN
					NO CORE: 0.18 m						
		14	35.0		**SILTSTONE**: dark grey, distinctly laminated 0-5°.						PT, 0°, PL, SO, CN
					Borehole SBT-GW-1001 terminated at 35.00 m Target depth						
		13	36.0								
		12	37.0								
		11	38.0								
		10	39.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 29/11/2022 12:19

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1001***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Chesham Street, St Marys NSW*	date started:	***04 May 2022***
		date completed:	***06 May 2022***
		logged by:	***RF***
		checked by:	***DS***

position: E: 294435; N: 6261848 (GDA2020 MGA) surface elevation: 49.06 m (AHD) angle from horizontal: 90°

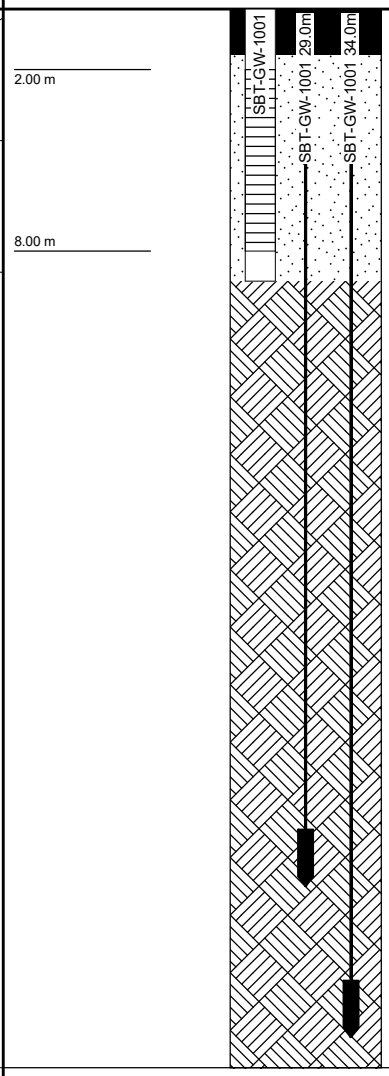
equipment type: Massenza M14, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T; CASING	Not Encountered	48			**FILL**
					RESIDUAL SOIL
					EXTREMELY WEATHERED SILTSTONE
			8		
HQ		40			**BEDROCK**
			16		
		32			
			24		
		24			
			32		
		16			



method & support
see engineering log for details

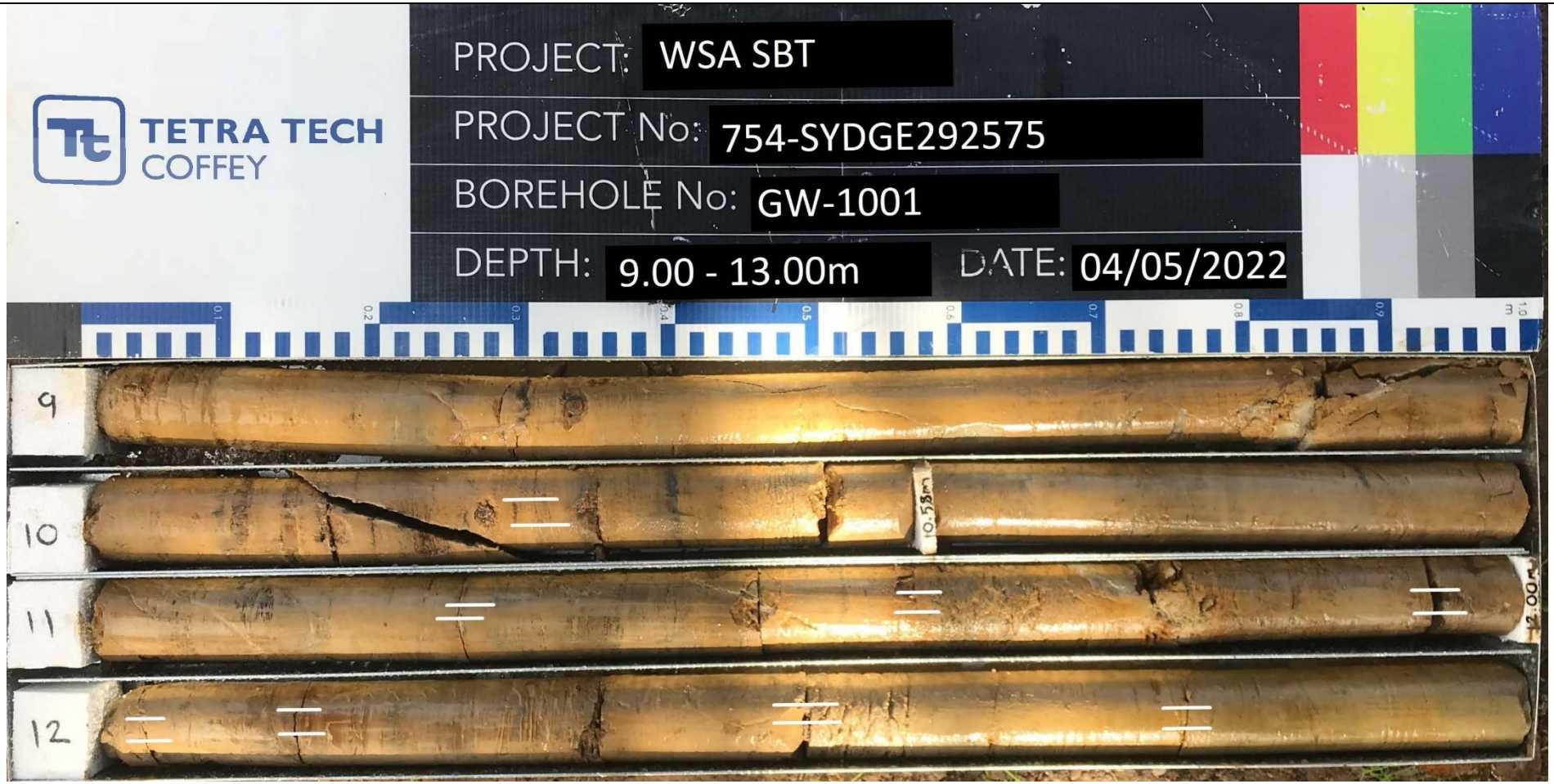
water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1001	standpipe piezometer				9.00 m			40.06	
SBT-GW-1001	vibrating wire piezometer				29.00 m			20.06	
29.0m	vibrating wire piezometer				34.00 m			15.06	
SBT-GW-1001 34.0m									

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY SBT-GW-1001+VW+MW.GPJ <<DrawingFile>> 25/11/2022 14:09

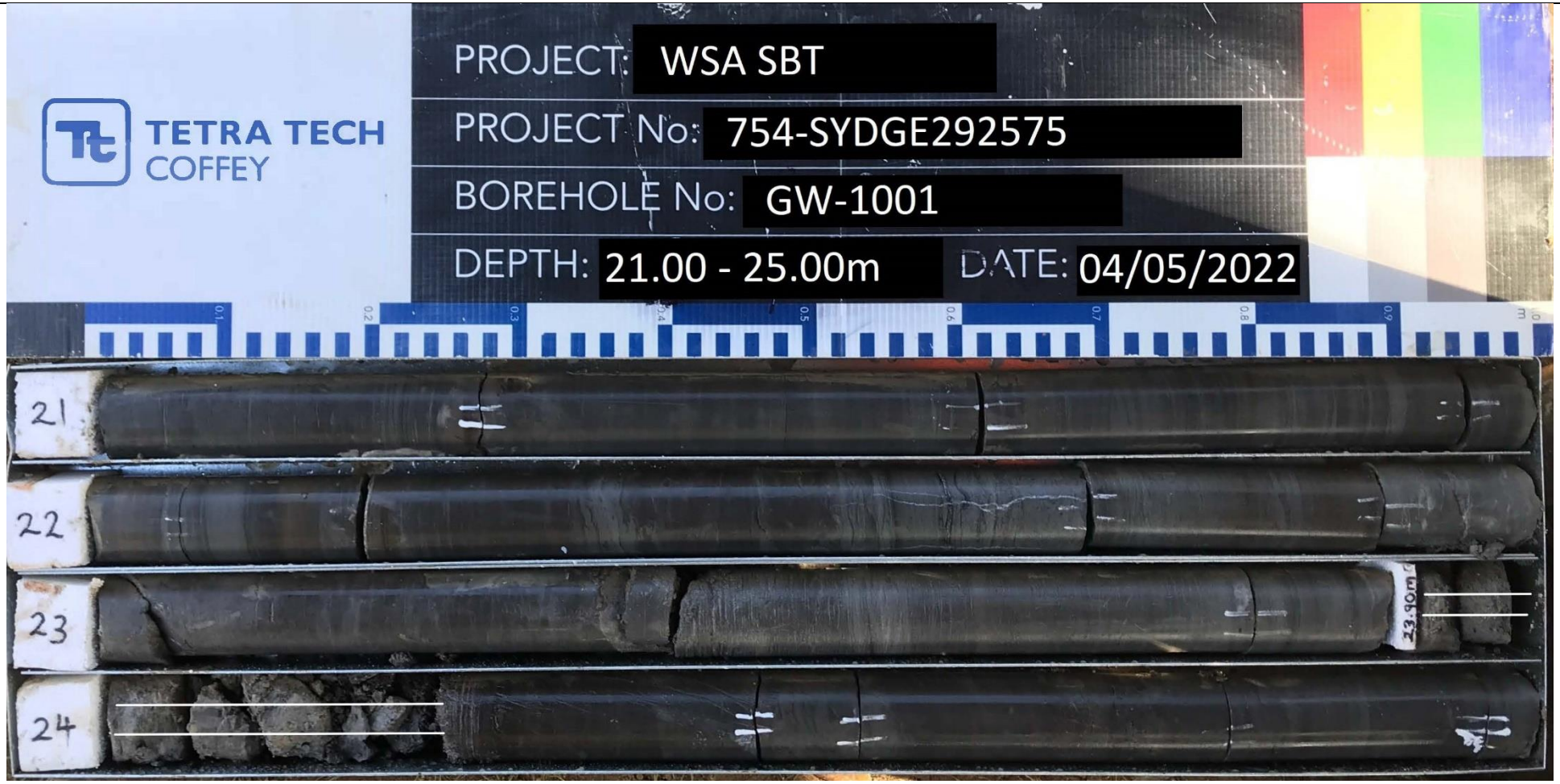
drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 4**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 6**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1001**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 7**

drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	23/09/2022		title:	CORE PHOTOGRAPH SBT-GW-1001
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 8

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1012***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Street, St Marys, NSW*	date started:	***12 Dec 2022***
		date completed:	***12 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
NDD								**BRICK PAVEMENT**.				**BRICK PAVEMENT**
								CONCRETE.				**CONCRETE**
								NDD: up to 1.80 m.				**NON-DESTRUCTIVE DRILLING**
					1.0							
HS, C					2.0		CH	**Silty CLAY**: high plasticity, red-brown, grey.	>Wp	F		**RESIDUAL SOIL**
		12/12/22	E		3.0							
					4.0			3.6 m: becoming brown and grey, tace fine gravels and fine sand				
					5.0					St		
			E		6.0		CH	**Sandy CLAY**: high plasticity, pale grey, pale grey fine sand, with fine to medium grained gravel.				
					7.0		CL	**Gravelly CLAY**: low plasticity, pale brown, red, fine to medium grained gravels, with fine sands.		VSt		
			E									

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1012.GPJ <<DrawingFile>> 16/12/2022 11:56

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1012***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Street, St Marys, NSW*	date started:	***12 Dec 2022***
		date completed:	***12 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa)	soil origin, structure and additional observations
HS, C								**SILTSTONE**: brown, extremely weathered, rock fabrics and ironstone visible.				**EXTREMELY WEATHERED BEDROCK**
W, N					9.0 10.0 11.0 12.0 13.0 14.0 15.0			**SILTSTONE**: dark brown. 12.0 m: becoming dark grey to grey				**BEDROCK**

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1012.GPJ <<DrawingFile>> 16/12/2022 11:56

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1012***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Street, St Marys, NSW*	date started:	***12 Dec 2022***
		date completed:	***12 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information						material substance						
method & support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) (100 200 300 400)	soil origin, structure and additional observations
W N								**SILTSTONE**: dark brown. *(continued)*				**BEDROCK**
								Borehole SBT-GW-1012 terminated at 16.5 m Target depth				
					17.0							
					18.0							
					19.0							
					20.0							
					21.0							
					22.0							
					23.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
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* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1012.GPJ <<DrawingFile>> 16/12/2022 11:56

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1012***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Street, St Marys, NSW*	date started:	***12 Dec 2022***
		date completed:	***12 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

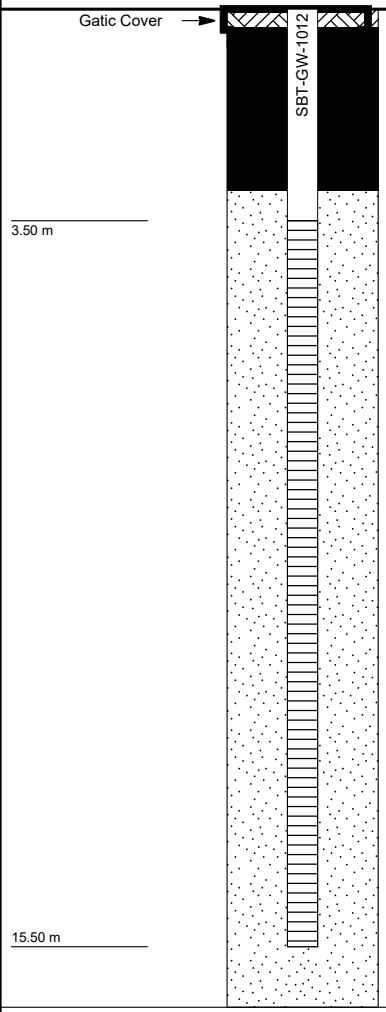
equipment type: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
NDD					**BRICK PAVEMENT**
					CONCRETE
					NON-DESTRUCTIVE DRILLING
					RESIDUAL SOIL
HS, C	12/12/22		4		
			8		**EXTREMELY WEATHERED BEDROCK**
					BEDROCK
W, N			12		
			16		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1012	Standpipe piezometer				15.50 m				

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY SBT-GW-1012.GPJ <<DrawingFile>> 14/12/2022 14:45

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1013***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Entry, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
NDD								**BRICK PAVEMENT**.				**BRICK PAVEMENT**
								CONCRETE.				**CONCRETE**
								NON-DESTRUCTIVE DRILLING: up to 2.0 m.				**NDD**
					1.0							
HS C					2.0		CH	**Gravelly CLAY**: high plasticity, red-brown, grey, fine to medium grained gravel up to 10 mm in diameter, with fine sand.	>Wp	F		**RESIDUAL SOIL**
		08/12/22	E		3.0							
			E				CH	**Silty CLAY**: high plasticity, red-brown, grey, trace fine sand. 3.8 m: becoming orange-brown, grey		St		
					4.0							
					5.0							
			E					5.4 m: becoming pale grey, orange and red, with fine ironstone gravels		VSt		
					6.0							
					7.0							
								SILTSTONE: pale brown, extremely weathered, rock fabrics and ironstone visible.				**EXTREMELY WEATHERED BEDROCK**

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-1013***
principal:	***Sydney Metro***	sheet:	2 of 3
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Station Entry, St Marys, NSW***	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
HS, C								**SILTSTONE**: pale brown, extremely weathered, rock fabrics and ironstone visible. *(continued)*				**EXTREMELY WEATHERED BEDROCK**
								SILTSTONE: pale brown, grey.				**BEDROCK**
					9.0							
					10.0							
								10.8 m: becoming dark grey				
					11.0							
W, N					12.0							
					13.0							
					14.0							
					15.0							

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1013.GPJ <<DrawingFile>> 02/03/2023 16:07

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-1013***
principal:	***Sydney Metro***	sheet:	3 of 3
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Station Entry, St Marys, NSW***	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information							material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
W N								**SILTSTONE**: pale brown, grey. *(continued)*				**BEDROCK**
								Borehole SBT-GW-1013 terminated at 16.5 m Target depth				
					17.0							
					18.0							
					19.0							
					20.0							
					21.0							
					22.0							
					23.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1013.GPJ <<DrawingFile>> 02/03/2023 16:07

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1013***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Station Entry, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

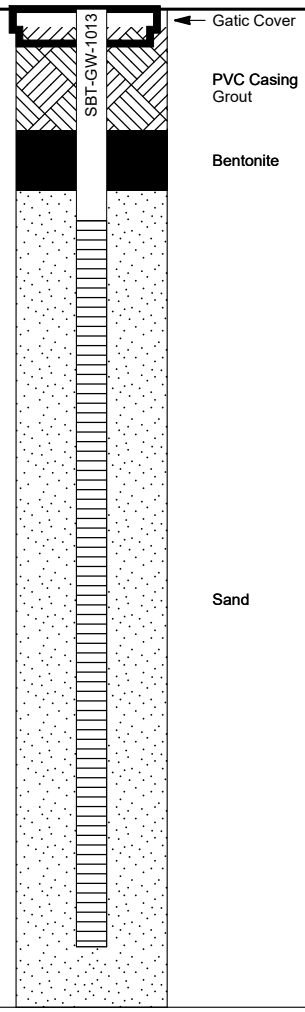
position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

equipment type: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:
bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
NDD					**BRICK PAVEMENT**
					CONCRETE
					NDD
					RESIDUAL SOIL
HS, C	08/12/22		4		
			8		**BEDROCK**
W, N			12		
			16		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1013	standpipe piezometer				15.50 m				

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY SBT-GW-1013.GPJ <<DrawingFile>> 14/12/2022 15:40

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1014***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*1 Queen Street, Station, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: 35.55 m (AHD) | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
								CONCRETE/BRICK PAVEMENT.				**CONCRETE**
NDD				35	1.0			**NON-DESTRUCTIVE DRILLING**: up to 2.0 m.				**NDD**
				34								
					2.0		CH	**Silty CLAY**: high plasticity, red, dark grey, with fine sand and fine grained gravel.	>Wp	St		**RESIDUAL SOIL**
		08/12/22	E	33	3.0							
				32								
C					4.0			4.0 m: becoming grey, orange and brown, with fine to medium gravels and fine sand		VSt		
				31								
AD/T					5.0							
			E				CH	**Silty CLAY**: high plasticity, orange-brown, grey.				
				30								
					6.0							
				29								
					7.0							
				28								
								SILTSTONE: red, orange, with ironstone gravels.				**BEDROCK**

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1014.GPJ <<DrawingFile>> 02/03/2023 15:32

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1014***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*1 Queen Street, Station, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: 35.55 m (AHD) | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, C								**SILTSTONE**: red, orange, with ironstone gravels. *(continued)*				**BEDROCK**
				27				**SILTSTONE**: dark grey, brown.				
					9.0							
				26								
					10.0							
				25								
					11.0							
W, N				24				11.5 m: becoming dark grey				
					12.0							
				23								
					13.0							
				22								
					14.0							
				21								
					15.0							
				20								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1014.GPJ <<DrawingFile>> 02/03/2023 15:32

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1014***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*1 Queen Street, Station, St Marys, NSW*	date started:	***08 Dec 2022***
		date completed:	***08 Dec 2022***
		logged by:	***PD***
		checked by:	

position: Not Specified | surface elevation: 35.55 m (AHD) | angle from horizontal: 90°

drill model: Comacchio GEO 305, Track mounted | drilling fluid: Water | hole diameter : 100 mm

drilling information							material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
W N								**SILTSTONE**: dark grey, brown. *(continued)*				**BEDROCK**
				19				Borehole SBT-GW-1014 terminated at 16.5 m Target depth				
					17.0							
				18								
					18.0							
				17								
					19.0							
				16								
					20.0							
				15								
					21.0							
				14								
					22.0							
				13								
					23.0							
				12								

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1014.GPJ <<DrawingFile>> 02/03/2023 15:32

method

DT	diatube
AD	auger drilling*
AS	auger screwing*
HA	hand auger
W	washbore
RR	rock roller
*	bit shown by suffix
e.g.	AD/T
B	blank bit
T	TC bit
V	V bit

support

M	mud	N	nil
C	casing		

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown

water inflow

water outflow

samples & field tests

B	bulk disturbed sample
D	disturbed sample
E	environmental sample
SS	split spoon sample
U##	undisturbed sample ##mm diameter
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear; peak/remouded (kPa)
R	refusal
HB	hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1016***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Queen Street, St Marys, NSW*	date started:	***07 Oct 2022***
		date completed:	***07 Oct 2022***
		logged by:	***JE/RF***
		checked by:	

position: E: 293905; N: 6261843 (GDA2020 MGA) surface elevation: Not Specified angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
NDD								**ASPHALT CONCRETE**.				**ASPHALT CONCRETE**
								ROAD BASE.				
					1.0		OH	**Silty CLAY**: high plasticity, grey and red-brown.	M - ~Wp	St		**RESIDUAL SOIL**
			E		2.0		CL	**Sandy CLAY**: medium plasticity, pale grey, with some red-brown blotching.				
			E		3.0							
			SPT 3, 4, 5 N*=9									HP 200 - 250 kPa
N			E		4.0							
			SPT 7, 5, 7 N*=12				SC	**CLAYEY SAND**: fine to medium grained, pale grey, with sub-angular ironstone gravel up to 10 mm, trace of sandy clay.	M	MD		HP 130 - 200 kPa
SS			E		5.0							
			E		6.0							
			SPT 4, 6, 7 N*=13									HP 200 - 240 kPa
							CL	**Sandy CLAY**: low plasticity, pale grey, brown, with fine sand.	<Wp	St		
			E		7.0							
			SPT 34/120mm N*=R				CL	**Gravelly CLAY**: low plasticity, red-brown, with fine to medium iron indurated gravel, trace fine sand.		H		
			F									

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1016.GPJ <<DrawingFile>> 27/10/2022 11:33

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1016*
principal:	*Sydney Metro*	sheet:	2 of 2
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Queen Street, St Marys, NSW*	date started:	*07 Oct 2022*
		date completed:	*07 Oct 2022*
		logged by:	*JE/RF*
		checked by:	

position: E: 293905; N: 6261843 (GDA2020 MGA) surface elevation: Not Specified angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS, N							CL	**Gravelly CLAY**: low plasticity, red-brown, with fine to medium iron indurated gravel, trace fine sand. *(continued)* becoming pale grey, red-brown	<Wp	H		**RESIDUAL SOIL**
			E		9.0		CH	**Silty CLAY**: high plasticity, orange mottled grey.	>Wp			
			SPT 11, 26/145mm N*=R					**SILTSTONE**: dark grey, extremely weathered, estimated very low to low strength.			>>>	**EXTREMELY WEATHERED SILTSTONE** HP >600 kPa
			E		10.0							
			E		11.0			Borehole SBT-GW-1016 terminated at 11.0 m				
					12.0							
					13.0							
					14.0							
					15.0							

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	*SBT-GW-1016*
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Queen Street, St Marys, NSW*	date started:	*07 Oct 2022*
		date completed:	*07 Oct 2022*
		logged by:	*JE/RF*
		checked by:	

position: E: 293905; N: 6261843 (GDA2020 MGA) surface elevation: Not Specified angle from horizontal: 90°

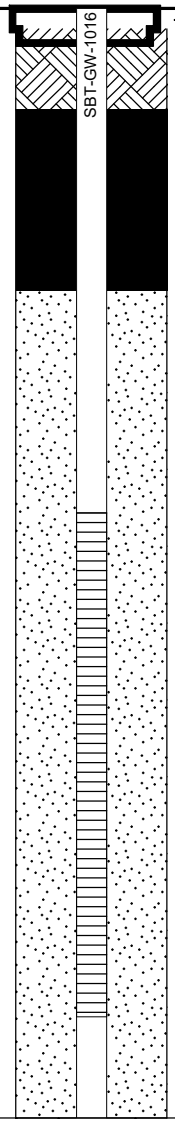
equipment type: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company: Numac
driller: Geoff Connor
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
NDD					ASPHALT CONCRETE
			1		RESIDUAL SOIL
			2		
			3		
			4		
			5		
N			6		
SS			7		
			8		
			9		EXTREMELY WEATHERED SILTSTONE
			10		
			11		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1016	Standpipe piezometer				11.00 m				

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1017***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*49 Forrester Road, St Marys, NSW*	date started:	***27 Sep 2022***
		date completed:	***27 Sep 2022***
		logged by:	
		checked by:	

position: E: 293946; N: 6262115 (GDA2020 MGA) surface elevation: 32.79 m (AHD) angle from horizontal: 90°

drill model: Geo 205 drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

samples & field tests	RL (m)	depth (m)	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
E				**ROAD SURFACE: ASHPHALT/DRIVEWAY CONCRETE.**				**ASPHALT**
E			SM	**FILL: Gravelly SAND**: medium to coarse grained, red-brown, with some silt/clay.	W			**FILL**
			CH	**SILTY SAND**: fine to coarse grained, grey, with characoal.	M	St		**RESIDUAL SOIL**
E	32	1.0	CH	**Sandy CLAY**: high plasticity, grey-green, with some sub-rounded gravel and charcoal up to 6 mm.	>Wp			
SPT 2, 4, 5 N*=9	31	2.0		**Silty CLAY**: high plasticity, yellow-brown with red-brown mottling, sandy in parts.				HP 180 kPa HP 180 kPa HP 200 kPa HP 240 kPa
E				1.7 m: grading to grey mottled red-brown	~Wp			
E	30	3.0		2.7 m: grading to pale grey, mottled brown, sandy in parts				
SPT 4, 7, 8 N*=15					>Wp			HP 240 kPa HP 220 kPa HP 200 kPa HP 180 kPa
E	29	4.0	CH	**Silty CLAY**: high plasticity, pale grey, mottled brown, sandy in parts.	~Wp			
SPT 4, 5, 9 N*=14	28	5.0						HP 240 kPa HP 260 kPa HP 320 kPa
E	27	6.0	SC	**CLAYEY SAND**: fine to medium grained, grey mottled orange-brown.	=Wp	MD		
SPT 5, 10, 12 N*=22				From 6.10 m: iron cemented layer				
E	26	7.0						
SPT 13, 10, 10 N*=20	25			From 7.40-7.65 m: iron cemented gravels				
E								

27/09/22

SS N

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-1017***
principal:	***Sydney Metro***	sheet:	2 of 2
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***49 Forrester Road, St Marys, NSW***	date started:	***27 Sep 2022***
		date completed:	***27 Sep 2022***
		logged by:	
		checked by:	

position: E: 293946; N: 6262115 (GDA2020 MGA) surface elevation: 32.79 m (AHD) angle from horizontal: 90°

drill model: Geo 205 drilling fluid: Water hole diameter : 110 mm

drilling information							material substance							
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
SS N			E	24	9.0		SC	**CLAYEY SAND**: fine to medium grained, grey mottled orange-brown. *(continued)* 8.0 to 8.6 m: Becoming gravelly	=Wp	MD		**RESIDUAL SOIL**
				23	10.0			Borehole SBT-GW-1017 terminated at 9.0 m				
				22	11.0							
				21	12.0							
				20	13.0							
				19	14.0							
				18	15.0							
				17								

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1017***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*49 Forrester Road, St Marys, NSW*	date started:	***27 Sep 2022***
		date completed:	***27 Sep 2022***
		logged by:	
		checked by:	

position: E: 293946; N: 6262115 (GDA2020 MGA) surface elevation: 32.79 m (AHD) angle from horizontal: 90°

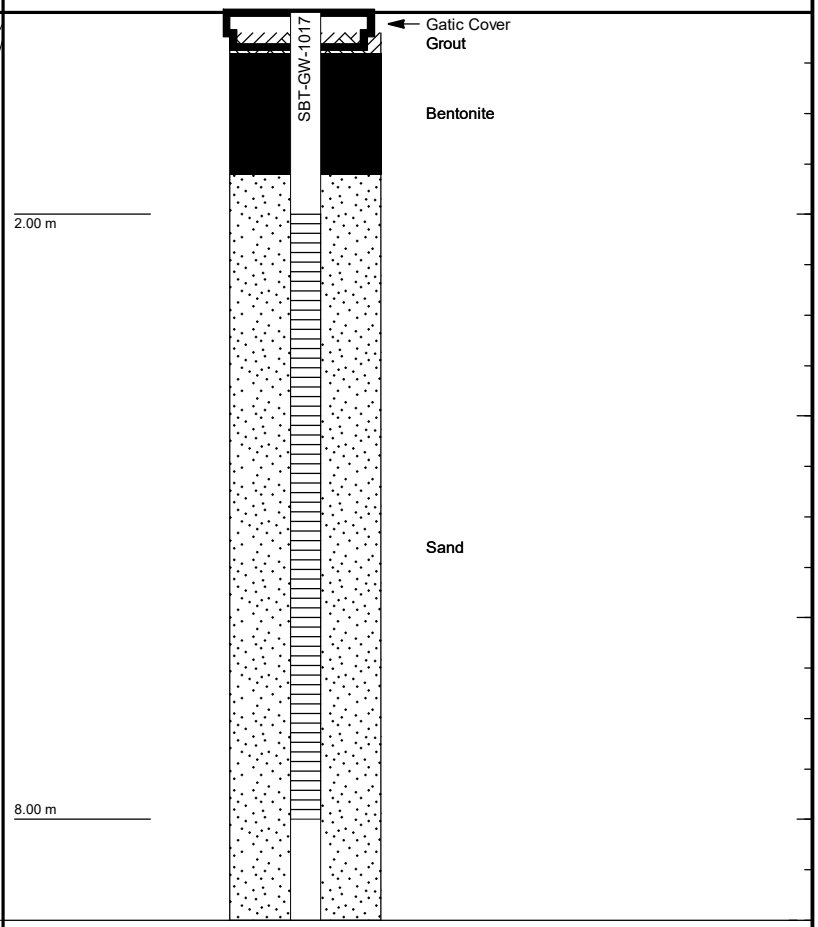
equipment type: Geo 205 drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company: Numac
driller: GC
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
SS, N	27/09/22	32	1		ASPHALT
					FILL
					RESIDUAL SOIL
		30	2		
			3		
		28	4		
			5		
		26	6		
			7		
		24	8		
		22	9		
			10		
			11		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1017	Standpipe piezometer				9.00 m			23.79	

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1019_R*
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*St Marys NSW*	date started:	*31 Aug 2022*
		date completed:	*01 Sep 2022*
		logged by:	*JF*
		checked by:	

position: E: 293888; N: 6261979 (GDA2020 MGA) surface elevation: 35.30 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD, N		Not Encountered		35				**Gravelly SAND**: fine to coarse grained, dark brown, with fine to medium gravels, foreign materials include terracotta pipe, brick, tile.	M			**FILL**
				34	1.0		CH	**Silty CLAY**: high plasticity, brown/red with grey speckles.	W	St		**RESIDUAL SOIL**
				33	2.0					VSt		
				32	3.0			3.5 m: colour change to grey				
				31	4.0							
				30	5.0							
				29	6.0							
				28	7.0		CL	**Silty Sandy CLAY**: medium plasticity, with fine to medium, angular grey sand.	~Wp	H		

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1019_R*
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*St Marys NSW*	date started:	*31 Aug 2022*
		date completed:	*01 Sep 2022*
		logged by:	*JF*
		checked by:	

position: E: 293888; N: 6261979 (GDA2020 MGA) surface elevation: 35.30 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD, N		Not Encountered		27			CL	**Silty Sandy CLAY**: medium plasticity, with fine to medium, angular grey sand. *(continued)*	~Wp	H		PID: 4.4 ppm **RESIDUAL SOIL**
			E		9.0							PID: 4.1 ppm
				26								
			E		10.0		CH	**Silty CLAY**: high plasticity, pale brown, small black nodules up to 2 mm.	<Wp			PID: 5.8 ppm
				25								
			E		11.0			10.7 m: colour change to dark grey/black, black nodules increase in size up to 5-10 mm				PID: 0.5 ppm
				24								
			E		12.0							PID: 0.5 ppm
				23								
			E		13.0							
				22								
			E		14.0							PID: 1.8 ppm
				21				14.2 m: 5% black nodules				
			E		15.0							PID: 1.4 ppm
				20								
			E									

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1019_R*
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*St Marys NSW*	date started:	*31 Aug 2022*
		date completed:	*01 Sep 2022*
		logged by:	*JF*
		checked by:	

position: E: 293888; N: 6261979 (GDA2020 MGA) surface elevation: 35.30 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD, N		Not Encountered	E	19, 18	17.0		CH	**Silty CLAY**: high plasticity, pale brown, small black nodules up to 2 mm. *(continued)* 16.0 m: siltstone fragments approx up to 10-30 mm	<Wp	H		PID: 1.6 ppm **RESIDUAL SOIL** PID: 1.9 ppm
			E		18.0			**CLAY**: high plasticity, pale grey to dark grey, rock texture evident (extremely weathered siltstone).				**EXTREMELY WEATHERED BEDROCK** PID: 1.4 ppm
				17, 16, 15, 14, 13, 12	19.0, 20.0, 21.0, 22.0, 23.0			Borehole SBT-GW-1019_R terminated at 18.0 m				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-1019_R.GPJ <<DrawingFile>> 27/10/2022 10:54

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	*SBT-GW-1019_R*
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*St Marys NSW*	date started:	*31 Aug 2022*
		date completed:	*01 Sep 2022*
		logged by:	*JF*
		checked by:	

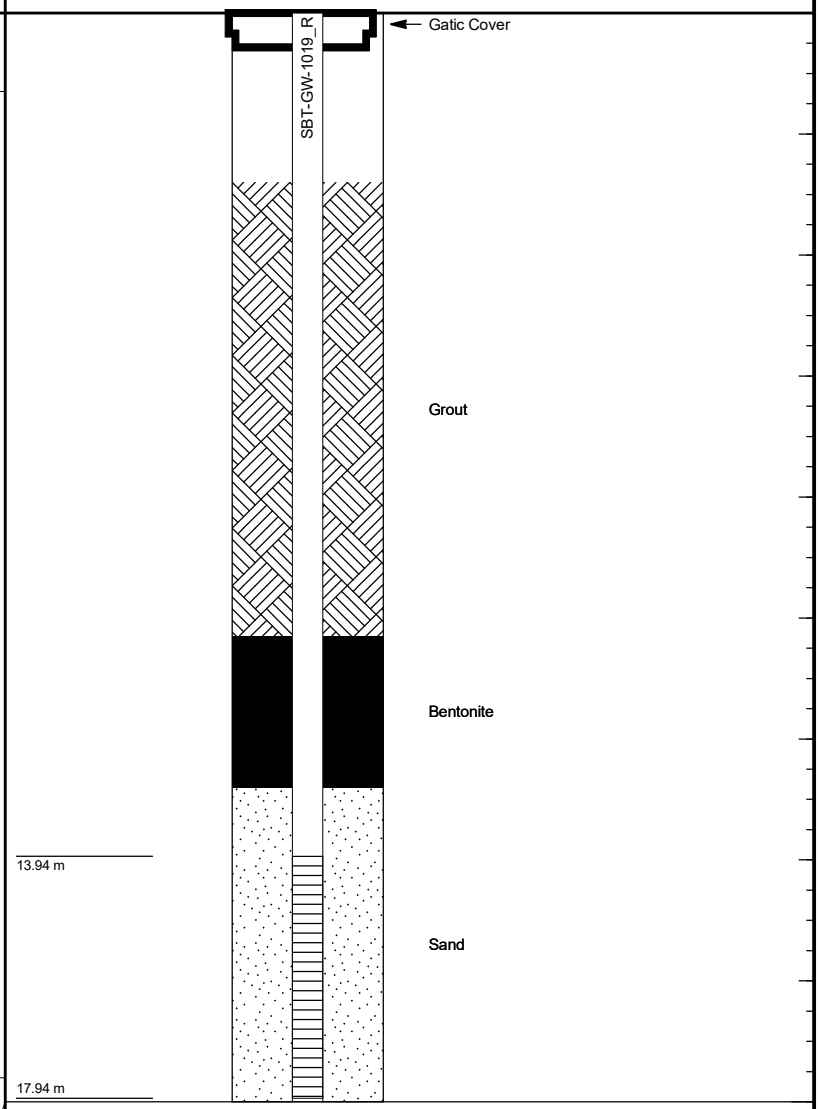
position: E: 293888; N: 6261979 (GDA2020 MGA) surface elevation: 35.30 m (AHD) angle from horizontal: 90°

equipment type: Geoprobe, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:
bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD / N	Not Encountered	32	4		**FILL**
					RESIDUAL SOIL
		28	8		
		24	12		
		20	16		
		16			**EXTREMELY WEATHERED BEDROCK**



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1019_R	Water Piezometer				18.00 m			17.30	

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1024***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*19 Gipps Street, Claremont Meadows, NSW*	date started:	***20 May 2022***
		date completed:	***20 May 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 292109; N: 6261303 (GDA2020 MGA) surface elevation: 27.92 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N								**FILL: Gravelly SAND**: fine to medium grained, grey, angular gravel up to 20 mm.				**FILL** PID: 0.5 ppm
							CL-CH	**CLAY**: medium to high plasticity, brown, trace gravel up to 5 mm.	>Wp	F - St		**POSSIBLE ALLUVIUM**
			SPT 2, 8, 13 N*=21	27	1.0					VSt		PID: 1.4 ppm
				26	2.0							PID: 1.2 ppm; HP 470 kPa; HP 240 kPa; HP 190 kPa
			SPT 9, 6, 7 N*=13	25	3.0		CH	**Gravelly CLAY**: high plasticity, pale grey, mottled brown, rounded to angular gravel up to 10 mm.		St		**RESIDUAL SOIL** PID: 1.6 ppm
			SPT 13, 16, 16 N*=32	24	4.0					VSt		PID: 0.8 ppm; HP 370 kPa; HP 120 kPa; HP 130 kPa
			SPT 6, 11, 20 N*=31	23	5.0							PID: 0.8 ppm
				22			CH	**CLAY**: high plasticity, with rounded gravel up to 10 mm, rock texture evident (extremely weathered siltstone).			>>>	**EXTREMELY WEATHERED MATERIAL** HP 600 kPa; HP 540 kPa; HP 570 kPa
					6.0			Borehole SBT-GW-1024 continued as cored hole				
				21	7.0							
				20								

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1024***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*19 Gipps Street, Claremont Meadows, NSW*	date started:	***20 May 2022***
		date completed:	***20 May 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 292109; N: 6261303 (GDA2020 MGA) surface elevation: 27.92 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		27	1.0								
		26	2.0								
		25	3.0								
		24	4.0								
		23	5.0								
		22			started coring at 5.95m						
HQ			6.0		**SILTSTONE**: recovered as sandy clay: medium to high plasticity, pale grey, fine to medium grained sand.	XW					JT, 45°, PL, RO, CO - Clay, XW JT, 20°, PL, RO, CO - Clay
		21	7.0		**SANDSTONE**: medium grained, brown, with 5-10% siltstone laminations, iron stained. 7.03 m: becoming grey, with distinctly laminated siltstone	MW SW		d=0.09 a=0.19 d=0.11 a=0.16	70%		JT, 90°, PL, RO, Fe CO - Clay JT, 60°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, Fe CO
		20									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1024***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*19 Gipps Street, Claremont Meadows, NSW*	date started:	***20 May 2022***
		date completed:	***20 May 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 292109; N: 6261303 (GDA2020 MGA) surface elevation: 27.92 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					**SANDSTONE**: medium grained, brown, with 5-10% siltstone laminations, iron stained. *(continued)*	SW		d=0.16 a=0.19	70%		
		19	9.0		**SANDSTONE**: fine to medium grained, grey, with 5% siltstone laminations, distinctly laminated between 0-5°.	FR		d=0.26 a=0.34			PT, 0°, PL, RO, CN; PT, 0°, PL, RO, CN; PT, 0°, PL, RO, CN; JT, 80°, PL, RO, CN; PT, 0°, PL, RO, CN
		18	10.0		**INTERBEDDED SILTSTONE (70%) AND SANDSTONE (30%)**: dark grey, sandstone is fine grained and grey, beds are up to 90 mm thick.			d=0.03 a=0.15	90%		PT, 0°, PL, RO, CN; JT, 70°, PL, RO, CN
					10.22 m: sandstone gravel clast			d=0.19 a=0.18			JT, 40°, PL, RO, CN
		17	11.0		10.76 m: sandstone gravel clast			d=0.37 a=0.19			
					11.20 m: sandstone gravel clast			d=0.14 a=0.16			PT, 0°, PL, RO, CO - Clay
					11.62 to 11.75 m: sandstone gravel clast						JT, 90°, PL, RO, CN
		16	12.0					d=0.19 a=0.17	100%		
								d=0.08 a=0.18			PT, 0 - 5°, PL, RO, CO - Clay
		15	13.0		Borehole SBT-GW-1024 terminated at 13.00 m Target depth						
		14	14.0								
		13	15.0								
		12									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1024***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*19 Gipps Street, Claremont Meadows, NSW*	date started:	***20 May 2022***
		date completed:	***20 May 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 292109; N: 6261303 (GDA2020 MGA) surface elevation: 27.92 m (AHD) angle from horizontal: 90°

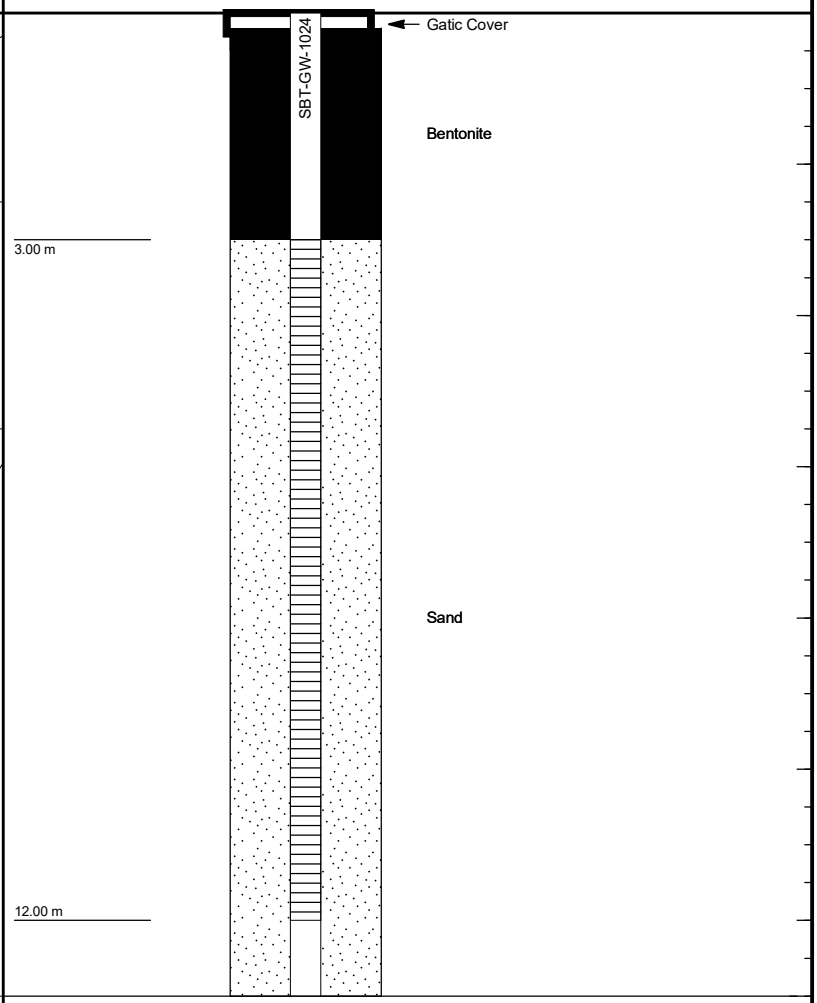
equipment type: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, N					**FILL**
					POSSIBLE ALLUVIUM
		26	1, 2		
					RESIDUAL SOIL
		24	3, 4		
			5		
		22	6		**EXTREMELY WEATHERED MATERIAL**
HQ					**BEDROCK**
		20	7, 8		
		18	9, 10		
		16	11, 12		
		14	13, 14		
		12	15		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1024	Standpipe piezometer				13.00 m			14.92	

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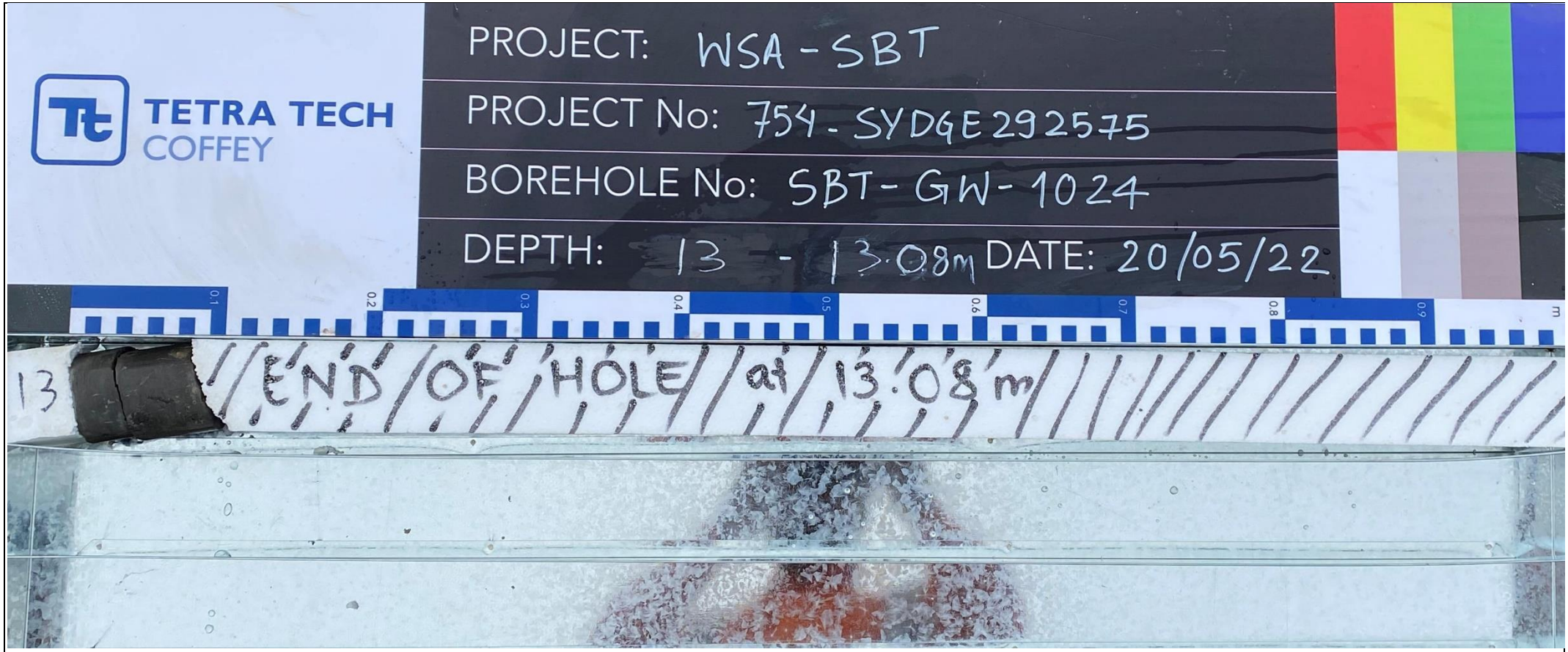
drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-1024**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-1024**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-1024**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-1037*
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Lot 44, Orchard Hills NSW*	date started:	*04 Aug 2022*
		date completed:	*04 Aug 2022*
		logged by:	*PD*
		checked by:	*DS*

position: E: 291758; N: 6259321 (GDA2020 MGA) surface elevation: 39.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, C							CL	**TOPSOIL: Silty CLAY**: low plasticity, dark grey, trace fine grained gravel and fine grained sand, with root fibres.	<Wp	VS		**TOPSOIL**
							CL-CI	**Silty CLAY**: low to medium plasticity, red-brown and grey, trace fine grained sand and fine gravel.	<Wp	S - F		**RESIDUAL SOIL**
				39			CI	**Silty CLAY**: medium plasticity, brown and grey, trace fine grained gravel. becoming pale grey				
					1.0							
				38			CI	**Silty CLAY**: medium plasticity, brown and grey with pale grey, fine grained sand and fine to medium grained gravel.				
					2.0							
		▶							~Wl			
				37								
					3.0							
				36								
					4.0			becoming grey-brown				
							CH	**Gravelly CLAY**: high plasticity, dark brown, grey and red, fine ot medium angular to rounded gravel. becoming dark grey	>Wp	VSt - H		
				35								
					5.0							
							CH	**Silty CLAY**: high plasticity, pale grey and brown, trace fine grained sand and fine gravel, rock fabric and texture visible, inferred as: Siltstone, extremely weathered, very low strength.		H		**EXTREMELY WEATHERED SILTSTONE**
				34								
W					6.0			**SILTSTONE**: dark grey.				**SILTSTONE**
				33								
					7.0							
				32								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-1037***
principal:	***Sydney Metro***	sheet:	2 of 2
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Lot 44, Orchard Hills NSW***	date started:	***04 Aug 2022***
		date completed:	***04 Aug 2022***
		logged by:	***PD***
		checked by:	***DS***

position: E: 291758; N: 6259321 (GDA2020 MGA) surface elevation: 39.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information							material substance							
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
W C				31				**SILTSTONE**: dark grey. *(continued)*				**SILTSTONE**
					9.0			Borehole SBT-GW-1037 terminated at 9.0 m				
				30	10.0							
				29	11.0							
				28	12.0							
				27	13.0							
				26	14.0							
				25	15.0							
				24								

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1037***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Lot 44, Orchard Hills NSW*	date started:	***04 Aug 2022***
		date completed:	***04 Aug 2022***
		logged by:	***PD***
		checked by:	***DS***

position: E: 291758; N: 6259321 (GDA2020 MGA) surface elevation: 39.72 m (AHD) angle from horizontal: 90°

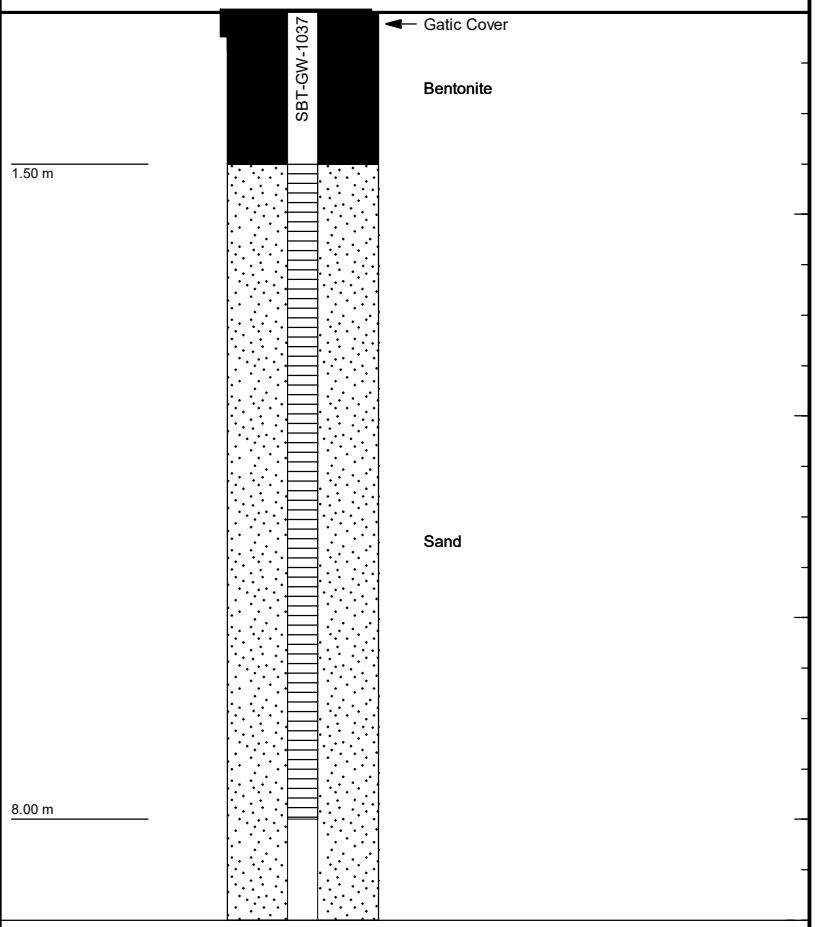
equipment type: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, C, W		38	1		**TOPSOIL**
					RESIDUAL SOIL
		36	2		
			3		
		34	4		
			5		**EXTREMELY WEATHERED SILTSTONE**
		32	6		**SILTSTONE**
		30	7		
		28	8		
			9		
			10		
			11		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1037	Standpipe piezometer				9.00 m			30.72	

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1042***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*98 Kent Road, Orchard Hills NSW (Private property)*	date started:	***17 Jun 2022***
		date completed:	***17 Jun 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 291875; N: 6259124 (GDA2020 MGA) surface elevation: 39.08 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T				39			CL	**TOPSOIL: Silty CLAY**: low plasticity, dark grey, trace fine grained sand, root fibres, grass and plastic pieces.	<Wp	S - F		**TOPSOIL**
								Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand, trace root fibres and fine to medium grained gravel.				**RESIDUAL**
			SPT 0, 7, 9, N*=16	38	1.0			1.0 m: becoming pale grey		S	HP 500 kPa HP 340 kPa HP 360 kPa	
							CL	**Silty CLAY**: medium plasticity, red-brown, trace fine grained sand and ironstone angular to rounded fine gravel.	>Wp			
			SPT 15, 17/120mm N*=R	37	2.0		GC	**CLAYEY GRAVEL**: red-brown and grey, angular to rounded ironstone gravel, clay is low plasticity, grey-brown with fine to medium grained sand.	M	D - VD	HP 270 kPa >P HP 400 kPa HP >600 kPa	
C				36	3.0		CH	**Silty CLAY**: high plasticity, red-brown and pale grey, trace fine grained sand and iron indurated round to angular fine grained gravel.	>Wp	St - VS	HP 10 kPa HP 400 kPa HP 460 kPa	
				35	4.0			4.0 m: becoming grey-brown 4.5 m: becoming dark grey				
				34	5.0		CL	**Silty CLAY**: low to medium plasticity, dark grey, brown and red, inferred as extremely weathered very low strength Siltstone, trace carbonaceous.	<Wp	VSt - H	>P HP 290 kPa >>	**EXTREMELY WEATHERED SILTSTONE**
W								Borehole SBT-GW-1042 continued as cored hole			HP >600 kPa HP >600 kPa	
				33	6.0							
				32	7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1042***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*98 Kent Road, Orchard Hills NSW (Private property)*	date started:	***17 Jun 2022***
		date completed:	***17 Jun 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 291875; N: 6259124 (GDA2020 MGA) surface elevation: 39.08 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		39									
		38	1.0								
		37	2.0								
		36	3.0								
		35	4.0								
		34	5.0								
					started coring at 5.68m						
W		33	6.0		**Silty CLAY**: medium to high plasticity, brown-grey, trace fine grained sand and fine ironstone gravel, rock texture evident (extremely weathered siltstone). **SILTSTONE**: dark grey and grey.	XW - HW MW					SM, Clay, 50 mm PT, 0 - 5°, PL, RO, Clay CO CS, 90 mm, fractured rock, iron indurated
		32	7.0			SW		d=0.21 a=0.12 d=0.02 a=0.13	89%		PT, 0 - 5°, PL, RO, CO PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 5°, PL, RO, CN PT, 0 - 5°, PL, RO, Clay CO

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1042***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*98 Kent Road, Orchard Hills NSW (Private property)*	date started:	***17 Jun 2022***
		date completed:	***17 Jun 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 291875; N: 6259124 (GDA2020 MGA) surface elevation: 39.08 m (AHD) angle from horizontal: 90°

drill model: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular	general
W		31			**INTERBEDDED: (80% SILTSTONE, 30% SANDSTONE)**: siltstone is dark grey, sandstone is fine grained, grey. 8.50 to 8.70 m: disturbed bedding	SW			89%		PT, 0 - 5°, PL, RO, CO, clay	
								d=0.11 a=0.21			PT, 0 - 5°, PL, RO, CN	
		30	9.0		**NO CORE:** 0.05 m Borehole SBT-GW-1042 terminated at 9.00 m							
		29	10.0									
		28	11.0									
		27	12.0									
		26	13.0									
		25	14.0									
		24	15.0									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1042***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*98 Kent Road, Orchard Hills NSW (Private property)*	date started:	***17 Jun 2022***
		date completed:	***17 Jun 2022***
		logged by:	***PD***
		checked by:	***VN***

position: E: 291875; N: 6259124 (GDA2020 MGA) surface elevation: 39.08 m (AHD) angle from horizontal: 90°

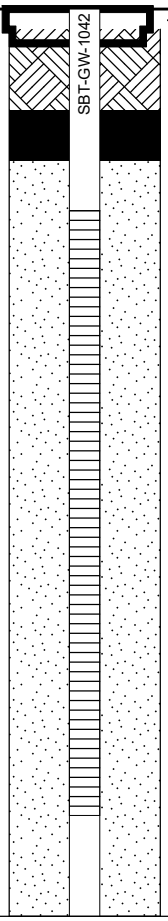
equipment type: Massenza MI4, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T		38	1		**TOPSOIL**
					RESIDUAL
			2		
		36	3		
C			4		
		34	5		
					EXTREMELY WEATHERED SILTSTONE
			6		**BEDROCK**
W		32	7		
			8		
		30	9		
			10		
		28	11		



Gatic Cover
Grout
Bentonite
Sand

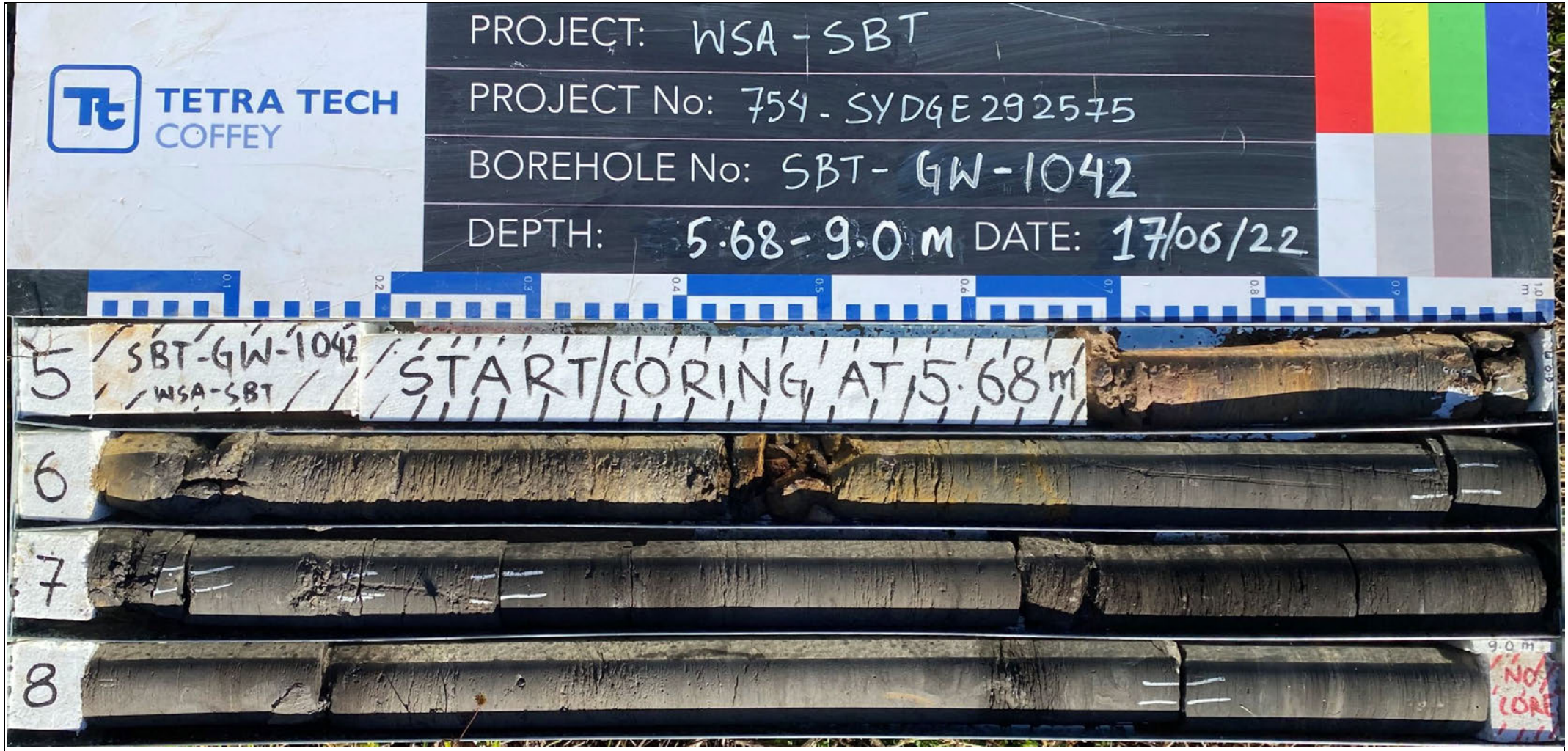
method & support
see engineering log for details

water
10-Oct-12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1042	Standpipe piezometer				9.00 m			30.08	

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY SBT-GW-1042.GPJ <<DrawingFile>> 25/11/2022 13:52



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date				
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-1042**
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1043***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Kent Road Orchard Hills (Private Property)*	date started:	***08 Aug 2022***
		date completed:	***08 Aug 2022***
		logged by:	***PD***
		checked by:	***DS***

position: E: 291876; N: 6259088 (GDA2020 MGA) surface elevation: 39.63 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T		Not Observed					CL	**TOPSOIL: Silty CLAY**: low plasticity, dark grey, trace fine grained sand and root fibres.	<Wp	VS		**TOPSOIL**
							CI	**Silty CLAY**: medium plasticity, red and brown, fine to medium iron indurated gravel.	>Wp	S		**RESIDUAL SOIL**
				39								
					1.0		CI	**Gravelly CLAY**: medium plasticity, red and brown, fine to medium iron indurated angular to rounded gravel. becoming pale grey	>Wp	VSt		
				38								HP 420 kPa
					2.0							
				37								HP 300 kPa
												HP 260 kPa
					3.0							HP 180 kPa
							CH	**Silty CLAY**: high plasticity, brown, grey and red, with iron indurated gravel and trace fine grained sand.		St - VSt		
				36								
C					4.0			becoming grey-brown				>>HP >600 kPa
												>>HP >600 kPa
				35				becoming dark grey				HP >600 kPa
W					5.0			**SILTSTONE**: dark grey and brown.				**BEDROCK**
				34								
					6.0							
				33								
					7.0							
				32								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1043***
principal:	*Sydney Metro*	sheet:	2 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Kent Road Orchard Hills (Private Property)*	date started:	***08 Aug 2022***
		date completed:	***08 Aug 2022***
		logged by:	***PD***
		checked by:	***DS***

position: E: 291876; N: 6259088 (GDA2020 MGA) surface elevation: 39.63 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information						material substance						
method & support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
W C		Not Observed		31				**SILTSTONE**: dark grey and brown. *(continued)*				**BEDROCK**
					9.0			Borehole SBT-GW-1043 terminated at 9.0 m				
				30								
					10.0							
				29								
					11.0							
				28								
					12.0							
				27								
					13.0							
				26								
					14.0							
				25								
					15.0							
				24								

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1043_S.GPJ <<DrawingFile>> 29/11/2022 12:25

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-1043***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Kent Road Orchard Hills (Private Property)*	date started:	***08 Aug 2022***
		date completed:	***08 Aug 2022***
		logged by:	***PD***
		checked by:	

position: E: 291876; N: 6259088 (GDA2020 MGA) surface elevation: 39.63 m (AHD) angle from horizontal: 90°

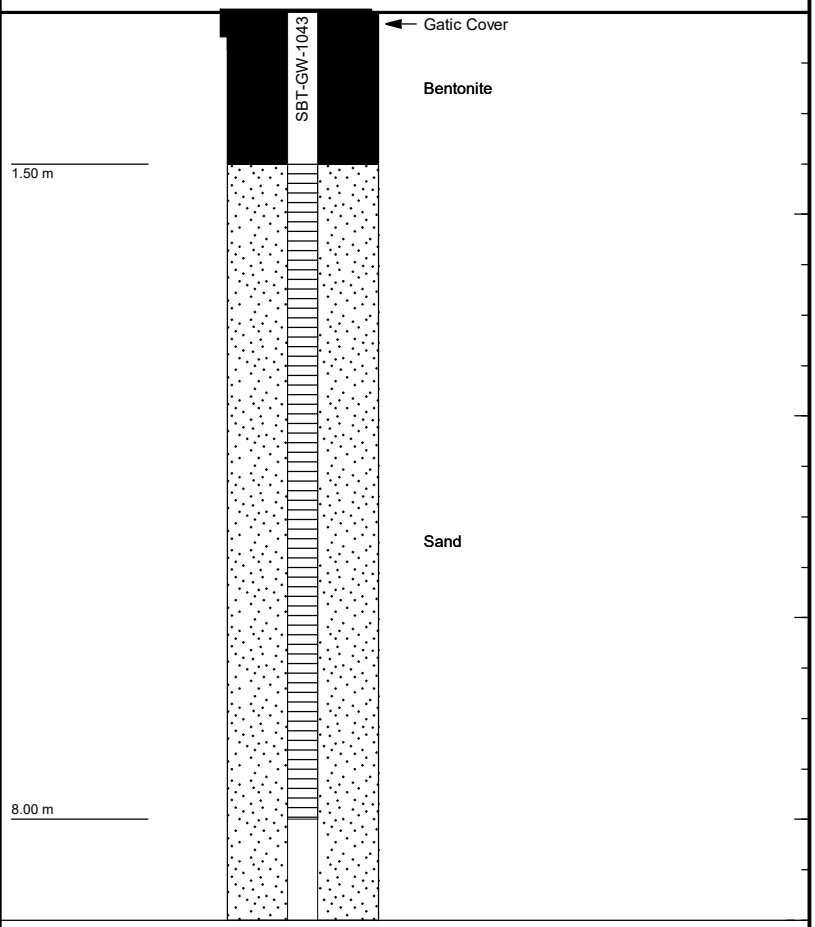
equipment type: Comacchio GEO 300, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T		38	1		**TOPSOIL**
					RESIDUAL SOIL
			2		
		36	3		
C			4		
			5		**ROCK**
		34	6		
W			7		
		32	8		
			9		
		30	10		
			11		
		28			



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-1043	Standpipe piezometer				9.00 m			30.63	

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY_SBT-GW-1043_S.GPJ <<DrawingFile>> 26/09/2022 15:21

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1063***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*114 Samuel Marsden Road, Orchard Hills, NSW*	date started:	***29 Sep 2022***
		date completed:	***30 Sep 2022***
		logged by:	***JE/PD***
		checked by:	***VN***

position: E: 292193; N: 6258861 (GDA2020 MGA) surface elevation: 31.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS, C		Not Observed	E, E, E, SPT 3, 5, 7 N*=12, E, SPT 8, 13, 18 N*=31, E, SPT 19, 20/25mm HB N*=R	31, 30, 29, 28, 27, 26, 25, 24	1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0		CH-MH	**TOPSOIL: Clayey SILT**: fine grained, brown.	M - Wp	St		**TOPSOIL**
								Silty CLAY: high plasticity, pale grey, mottled red-brown.				**RESIDUAL SOIL**
										VSt		
								SILTSTONE: grey, extremely weathered, estimated very low to low strength.				**EXTREMELY WEATHERED SILTSTONE**
								Borehole SBT-GW-1063 continued as cored hole				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-1063.GPJ <<DrawingFile>> 29/11/2022 11:04

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1063***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*114 Samuel Marsden Road, Orchard Hills, NSW*	date started:	***29 Sep 2022***
		date completed:	***30 Sep 2022***
		logged by:	***JE/PD***
		checked by:	***VN***

position: E: 292193; N: 6258861 (GDA2020 MGA) surface elevation: 31.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		31	1.0								
		30	2.0								
		29	3.0								
		28	4.0		started coring at 4.08m						
HQ	Not Observed	27	5.0		**SANDSTONE**: fine to medium grained, brown and grey, iron oxide stained.	HW			100%		
					NO CORE: 0.58 m				43%		
		26	6.0		**SANDSTONE**: fine grained, brown and grey, iron oxide stained.	HW			69%		CS, Clay, 100 mm
					SILTSTONE: pale brown, dark grey, distinctly bedded at 0-5°. 5.67 to 5.71 m: sandstone band, fine grained dark brown 6.00 m: becoming dark grey band, with 5% sandstone laminations	MW		d=0.13 a=0.47 d=0.47 a=0.23			PT, 10°, PL, RO, CN PT, 0°, PL, RO, Clay CO PT, 0 - 15°, IR, RO, Clay CO PT, 0°, PL, RO, Clay CO JT, 85°, UN, RO, Fe SN, 490 mm
		25	7.0			SW					PT, 5°, PL, RO, Fe SN
		24			**INTERLAMINATED SANDSTONE (80%) AND SILTSTONE (20%)**: sandstone is fine grained and pale grey, siltstone is dark grey, distinctly laminated at 0-5°.				100%		SM, Clay, 20 mm
					SILTSTONE: dark grey, grey, with 10% fine sandstone laminations, distinctly bedded at 0-5°.	FR		d=0.66			

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1063.GPJ <<DrawingFile>> 29/11/2022 11:03

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-1063***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*114 Samuel Marsden Road, Orchard Hills, NSW*	date started:	***29 Sep 2022***
		date completed:	***30 Sep 2022***
		logged by:	***JE/PD***
		checked by:	***VN***

position: E: 292193; N: 6258861 (GDA2020 MGA) surface elevation: 31.72 m (AHD) angle from horizontal: 90°

drill model: Comacchio GEO 205, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed				**SILTSTONE**: dark grey, grey, with 10% fine sandstone laminations, distinctly bedded at 0-5°. *(continued)* 8.10 to 8.30 m: with 15% fine grained sandstone lamination, distinctly cross-bedded at 5-20°	FR		a=0.49	100%		
		23	9.0					d=0.32 a=1.32			
		22	10.0		9.60 to 11.00 m: becoming grey with 10% fine grained sandstone			d=1.22 a=0.73 d=1.82 a=3.38	93%		
		21									
			11.0		**NO CORE:** 0.10 m						
					SILTSTONE: dark grey, grey, with 10% fine sandstone laminations, distinctly bedded at 0-5°. 11.00 to 11.68 m: dark grey	FR			100%		
		20			**SILTSTONE**: grey, with 10% sandstone laminations, indistinctly laminated.			d=3.00 a=3.61			PT, 5 - 10°, UN, RO, CA CO PT, 0 - 5°, X CO, tight
			12.0		Borehole SBT-GW-1063 terminated at 12.00 m						
		19	13.0								
		18	14.0								
		17	15.0								
		16									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-1063.GPJ <<DrawingFile>> 29/11/2022 11:03

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1063**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**8/11/2022**		title:	**CORE PHOTOGRAPH SBT-GW-1063**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-A***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:		date started:	***10 Aug 2022***
		date completed:	***11 Aug 2022***
		logged by:	***JE***
		checked by:	

position: E: 290426; N: 6248381 (GDA2020 MGA) surface elevation: 67.80 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: N/A hole diameter : 120 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa)	soil origin, structure and additional observations
SS		Not Encountered		67 66 65 64 63 62	1.0 2.0 3.0 4.0 5.0 6.0			**FILL: CLAY**: high plasticity, mixture of clay, medium grained sand, shale, sandstone gravel and cobbles..				**FILL** appears to be well compacted.
							CH	**Silty CLAY**: high plasticity, red-brown grading to grey mottled red-brown.				**RESIDUAL SOIL**
				61 60	7.0			Borehole SBT-GW-3003-A terminated at 6.3 m Target depth				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-3003-A.GPJ <<DrawingFile>> 27/10/2022 10:14

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-B***
principal:	*Sydney Metro*	sheet:	1 of 2
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Drive*	date started:	***10 Aug 2022***
		date completed:	***11 Aug 2022***
		logged by:	***JE***
		checked by:	

position: E: 290425; N: 6248382 (GDA2020 MGA) surface elevation: 67.55 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: N/A hole diameter : 120 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS				67 66 65 64 63 62 61 60	1.0 2.0 3.0 4.0 5.0 6.0 7.0			**FILL: CLAY**: high plasticity, mixture of clay, silt, gravel and rock.				**FILL** appears to be well compacted.
							CH	**Silty CLAY**: high plasticity, red-brown grading to grey mottled red-brown.				**RESIDUAL SOIL**
								SHALE: grey to dark grey, extremely weathered, estimated very low to low strength.				**EXTREMELY WEATHERED SHALE**

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-3003-B.GPJ <<DrawingFile>> 27/10/2022 10:21

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-3003-B***
principal:	***Sydney Metro***	sheet:	2 of 2
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Airport Drive***	date started:	***10 Aug 2022***
		date completed:	***11 Aug 2022***
		logged by:	***JE***
		checked by:	

position: E: 290425; N: 6248382 (GDA2020 MGA) surface elevation: 67.55 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: N/A hole diameter : 120 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetro-meter (kPa) 100 200 300 400	soil origin, structure and additional observations
SS				59 58 57 56 55 54	9.0 10.0 11.0 12.0 13.0 14.0			**SHALE**: grey to dark grey, extremely weathered, estimated very low to low strength. *(continued)*				**EXTREMELY WEATHERED SHALE**
				53 52	15.0			Borehole SBT-GW-3003-B terminated at 14.5 m Target depth				

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-3003-B.GPJ <<DrawingFile>> 27/10/2022 10:21

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-C***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Business Park*	date started:	***08 Aug 2022***
		date completed:	***10 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 290423; N: 6248384 (GDA2020 MGA) surface elevation: 67.38 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB-8, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
SS, C		Not Observed		67			CH	**FILL: Silty CLAY**: high plasticity, red-brown, grey-brown, with shale fragments.	M			**FILL**
			SPT 7, 10, 12 N=22	66	1.0				D - M			
			SPT 7, 10, 11 N=21	65	2.0							
			SPT 7, 16, 21 N=37	64	3.0							
			SPT 8, 31, 14 N=45	63	4.0			4.3 m: SANDSTONE cobble in SPT				
			SPT 3, 5, 12 N=17	62	5.0		CH	**Silty CLAY**: high plasticity, grey mottled orange-brown.	M	VSt	HP 250 kPa HP 320 kPa	**RESIDUAL SOIL**
			SPT 7, 21, 21 N=42	61	6.0					H	HP >400 kPa	
			SPT 8, 18, 16/60mm HB N=R	60	7.0			**SILTSTONE**: grey with orange-brown bands, extremely whethered, estimated very low to low strength..				**EXTREMELY WEATHERED SILTSTONE**
								Borehole SBT-GW-3003-C continued as cored hole				

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-3003-C.GPJ <<DrawingFile>> 23/11/2022 12:02

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-C***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Business Park*	date started:	***08 Aug 2022***
		date completed:	***10 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 290423; N: 6248384 (GDA2020 MGA) surface elevation: 67.38 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB-8, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		67									
			1.0								
		66									
			2.0								
		65									
			3.0								
		64									
			4.0								
		63									
			5.0								
		62									
			6.0								
		61									
			7.0		started coring at 7.26m						
HQ	Not Observed	60			**SILTSTONE**: grey with orange-brown bands.	HW MW	OK	d=0.05 a=0.09	80% 100%		PT, 10°, PL, SO, Clay VN, 1 mm

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-3003-C.GPJ <<DrawingFile>> 23/11/2022 12:02

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3003-C***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Business Park*	date started:	***08 Aug 2022***
		date completed:	***10 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 290423; N: 6248384 (GDA2020 MGA) surface elevation: 67.38 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB-8, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	59		**SANDSTONE**: fine to medium grained, grey, with discontinuous siltstone/carbonaceous laminations, distinctly laminated at 0-5°.	SW		d=0.07 a=0.02	100%		PT, 5°, PL, SO, Clay VN, <=1 mm, carbonaceous veneer
				SILTSTONE: dark grey, with carbonaceous bands.						
			9.0				d=0.09 a=0.16			
		58						100%		PT, 0°, PL, RO, CN
			10.0				d=0.04 a=0.19			
		57								
			11.0					100%		
		56		11.30 to 11.34 m: sandy band			d=0.02 a=0.12			PT, 5°, PL, SO, CN; PT, 5°, PL, SO, CN
			12.0							
		55								
			13.0				d=0.10 a=0.21	100%		
		54								Vein, 5°, UN, SO, 4 mm, siderite
							d=0.02 a=0.12			SM, 5°, PL, SO, Clay, 40 mm
			14.0	**SANDSTONE**: fine to medium grained, grey, with discontinuous dark grey siltstone/carbonaceous laminations. From 14.55 m: becoming distinctly laminated at 0-10°.	FR		d=2.19 a=1.42			PT, 5°, PL, SO, VN, <=1 mm, carbonaceous veneer
		53						100%		
			15.0	**SILTSTONE**: dark grey.						
		52		15.27 to 15.29 m: sideritic band			d=0.07 a=0.31	100%		PT, 5°, PL, SO, CN

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-3003-C.GPJ <<DrawingFile>> 23/11/2022 12:02

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	*SBT-GW-3003-C*
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	*754-SYDGE292575*
location:	*Airport Business Park*	date started:	*08 Aug 2022*
		date completed:	*10 Aug 2022*
		logged by:	*JE*
		checked by:	*VN*

position: E: 290423; N: 6248384 (GDA2020 MGA) surface elevation: 67.38 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB-8, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	51		**SILTSTONE**: dark grey. *(continued)*	FR					PT, 5°, PL, SO, CN
			17.0	**SANDSTONE**: fine to medium grained, grey, with discontinuous dark grey siltstone/carbonaceous laminations, distinctly laminated at 0-5°.			d=0.31 a=0.32	100%		JT, 30°, PL, SO, CN
		50					d=0.50 a=0.66			Vein, 5°, PL, SO, CA, 2 mm; PT, 5°, PL, SO, Clay VN, <=1 mm
			18.0	**SILTSTONE**: dark grey.						PT, 5°, PL, SO, CN; SM, 5°, PL, SO, Clay, 30 mm; PT, 5°, PL, SO, CN
		49			HW		d=0.04 a=0.23			
			19.0	**SANDSTONE**: fine to medium grained, grey, with discontinuous dark grey siltstone/carbonaceous laminations.	FR					
		48		**SILTSTONE**: grey with dark grey bands.				100%		
			20.0				d=0.19 a=0.33; d=0.04 a=0.30			PT, 10°, PL, SO, Clay filled, 4 mm; PT, 5°, UN, SO, Clay filled, 4 mm; PT, 5°, UN, SO, Clay CO, <=2 mm
		47								
			21.0	**SANDSTONE**: fine to medium grained, grey, pale grey, with 10% siltstone laminations.						JT, 85°, UN, SO, CA CO, <=2 mm
		46		From 21.2 m: becoming distinctly laminated at 0-5°.						
			22.0	**SILTSTONE**: dark grey, with 10-15% sandstone laminations, fine to medium grained, grey, distinctly laminated at 0-5°.			d=0.08 a=0.22 d=0.35 a=0.23	89%		
		45								PT, 5°, PL, SO, Coal, <=3 mm
			23.0							SM, 5°, PL, SO, Clay, 20 mm; PT, 5°, PL, SO, CN, 20 mm
		44								
				Borehole SBT-GW-3003-C terminated at 23.50 m Target depth						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
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HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-3003-C.GPJ <<DrawingFile>> 23/11/2022 12:02

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			project:	**WSA SBT**
date	**28/10/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-3003-C**
size	**A4**		project no: **754-SYDGE292575**	Photograph: **1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			project:	**WSA SBT**
date	**28/10/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-3003-C**
size	**A4**		project no: **754-SYDGE292575**	Photograph: **2**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T; C		Not Observed	J+P+Z					**FILL: SILT**: low liquid limit, grey, trace medium grained, angular, dark grey sandstone gravels.	>Wl			**FILL**
			J+P+Z					**FILL: CLAY**: medium plasticity, orange-brown, trace fine to medium, orange-brown ironstone gravel.	~Wp			PID: 4 ppm 0.0-0.2m, T-114174
								0.8 m: orange-brown mottled page grey				PID: 4.1 ppm 0.4-0.5m
			J+P+Z	83	1.0							
			J+P+Z SPT 2, 6, 11 N*=17						<Wp			PID: 4.2 ppm 0.9-1.0m
												PID: 5.1 ppm 1.0-1.45m
				82	2.0							
			J+P+Z SPT 11, 16, 17 N*=33									
												PID: 7.2 ppm 2.0-2.45m
				81	3.0							
			J+P+Z SPT 5, 13, 13 N*=26				CH	**CLAY**: high plasticity, orange-brown mottled pale grey.	~Wp	VSt	X	**RESIDUAL SOIL**
												HP 450 kPa HP 460 kPa HP 440 kPa PID: 6.7 ppm 3.0-3.45m
				80	4.0							
			J+P+Z SPT 6, 14, 25 N*=39					**CLAY**: high plasticity, orange-brown and red-brown mottled pale grey.	D	H	>>X	
											>>X	HP >600 kPa HP >600 kPa HP >600 kPa HP >600 kPa HP >600 kPa HP >600 kPa PID: 6.9 ppm 4.0-4.45m
								Borehole SBT-GW-3012-C continued as cored hole				
				79	5.0							
				78	6.0							
				77	7.0							
				76								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-3012-C.GPJ <<DrawingFile>> 23/11/2022 12:47

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	2 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		83	1.0								
		82	2.0								
		81	3.0								
		80	4.0		started coring at 4.45m						
HQ	Not Observed	79	5.0		**CLAY**: high plasticity, pale grey mottled red-brown, with 15% ironstone bands up to 20mm.	RS			0%		
		78	6.0		**SILTSTONE**: pale grey and orange brown, indistinctly laminated at 0°.	HW					JT, 90°, PL, RO, SN
					CLAY: high plasticity, pale grey mottled red-brown, with 15% ironstone bands up to 20mm.				60%		
		77	7.0		**SILTSTONE**: pale grey and orange brown, indistinctly laminated at 0°, with iron staining.	HW					SM, Clay, 80 mm SM, Clay, 30 mm
						MW	O X	d=0.21 a=0.65	20%		SM, Clay, 150 mm
		76									

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method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	3 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	75	9.0	**SILTSTONE**: pale grey and orange brown, indistinctly laminated at 0°, with iron staining. *(continued)*	MW			20%		JT, 70°, PL, RO, Fe SN; SM, Clay, 100 mm; JT, 80°, PL, RO, VN; JT, 80°, PL, RO, VN; JT, 70°, PL, RO, Fe SN; SM, Clay, 10 mm; SM, Clay, 10 mm; SM, Clay, 10 mm; JT, 50°, PL, RO, SN; JT, 40°, PL, RO, SN; JT, 30°, PL, RO, SN; JT, 70°, PL, RO, Fe SN
		74	10.0	**SANDSTONE**: fine grained, pale grey-brown, indistinctly laminated.			d=0.35 a=0.37			
				SILTSTONE: dark grey, indistinctly laminated at 0-5°, with 5% sandstone laminations.	SW - FR		d=0.03 a=0.29	98%		SM, Clay, 40 mm; SM, Clay, 10 mm
		73	11.0	**NO CORE:** 0.16 m						
				SILTSTONE: dark grey, indistinctly laminated at 0-5°, with 5% sandstone laminations.	SW - FR		d=0.18 a=0.35			
		72	12.0	**SANDSTONE**: fine grained, grey, with 10% siltstone laminations, indistinctly laminated betwee 0-5°.			d=0.21 a=0.65			PT, 0°, PL, RO, CN; PT, 0°, PL, RO, CN
		71	13.0	**SILTSTONE**: dark grey, with 5-10% sandstone laminations, distinctly laminated at 0°.			d=0.06 a=0.49	100%		JT, 90°, PL, RO, CN; JT, 90°, PL, RO, CN; JT, 60°, PL, RO, CN
		70	14.0	**SANDSTONE**: fine grained, indistinctly laminated at 0-5° with 5% siltstone.			d=4.09 a=6.85	100%		JT, 60°, PL, VR, Fe SN
		69	15.0	**SILTSTONE**: dark grey, distinctly laminated at 0-5°.			d=0.12 a=0.29	99%		SM, Clay, 10 mm
		68		15.80 to 16.25 m: grey						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-3012-C.GPJ <<DrawingFile>> 23/11/2022 12:50

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	4 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed			**SILTSTONE**: dark grey, distinctly laminated at 0-5°. *(continued)*	SW - FR		d=0.04 a=0.18	99%		
		67	17.0	**INTERLAMINATED SANDSTONE (60%) AND SILTSTONE (40%)**: sandstone is fine, pale grey and siltstone is fine, dark grey, indistinctly laminated at 0-30°.						
				SILTSTONE: dark grey, indistinctly laminated at 0-5°.			d=0.12 a=0.74			
		66	18.0	**SANDSTONE**: fine grained, grey, indistinctly laminated at 0-5°; with 10-15% dark grey siltstone laminations.	FR		d=0.05 a=0.40			
		65	19.0				d=0.62 a=0.58	98%		
		64	20.0	19.80 m: becoming medium to coarse grained 20.12 m: becoming pale grey			d=1.02 a=1.10			JT, 85°, UN, VR, SN PT, 0 - 10°, CU, RO, CA, 2 mm, White Calcite, 0-20° JT, 70°, PL, SL, CN, 2x intersecting joints
		63	21.0	**SILTSTONE**: dark grey, indistinctly laminated at 0-5°; with 10% sandstone laminations. 20.80 to 21.20 m: with 5% MUDSTONE clasts 21.20 to 21.25 m: grey 21.30 to 21.60 m: grey			d=0.10 a=0.52 d=0.06 a=0.35			
		62	22.0				d=0.22 a=0.42	100%		JT, 10 - 45°, CU, RO, CN
		61	23.0	23.17 to 23.33 m: grey grading into dark grey						PT, 90°, PL, RO, CN PT, 0°, PL, CA, 5 mm, White Calcite, closed
		60		**INTERLAMINATED SILTSTONE (60%) AND SANDSTONE (40%)**: siltstone is dark grey, indistinctly laminated at 0-5° with 5% sandstone;						

method
DT diatube
NMLC NMLC core (51.9 mm)
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HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
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partial drilling fluid loss
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graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

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XW extremely weathered
HW highly weathered
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FR fresh
*W replaced with A for alteration

strength
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L low
M medium
H high
VH very high
EH extremely high

defect type
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JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	5 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	59	25.0		sandstone is fine, grey, indistinctly laminated at 0-5° with 5% siltstone. **SILTSTONE**: dark grey, indistinctly laminated at 0-5%, with 5% sandstone laminations and 5% rounded mudstone clasts up to 10mm. *(continued)*	FR	O X	d=0.12 a=0.39	100%		
							O X	d=0.07 a=0.47			PT, 0°, PL, RO, CN SM, 20 mm, Silty Clay
		58	26.0		**SANDSTONE**: fine grained, grey, indistinctly laminated. **SILTSTONE**: dark grey, indistinctly laminated at 0-5%, with 5% sandstone laminations and 5% rounded mudstone clasts up to 10mm.				100%		
							O X	d=0.07 a=0.18			
		57	27.0								
		56	28.0		Borehole SBT-GW-3012-C terminated at 27.20 m Target depth						
		55	29.0								
		54	30.0								
		53	31.0								
		52									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-3012-C***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Airport Terminal, NSW*	date started:	***12 Aug 2022***
		date completed:	***28 Aug 2022***
		logged by:	***FL***
		checked by:	***VN***

position: E: 289136; N: 6247680 (GDA2020 MGA) surface elevation: 83.96 m (AHD) angle from horizontal: 90°

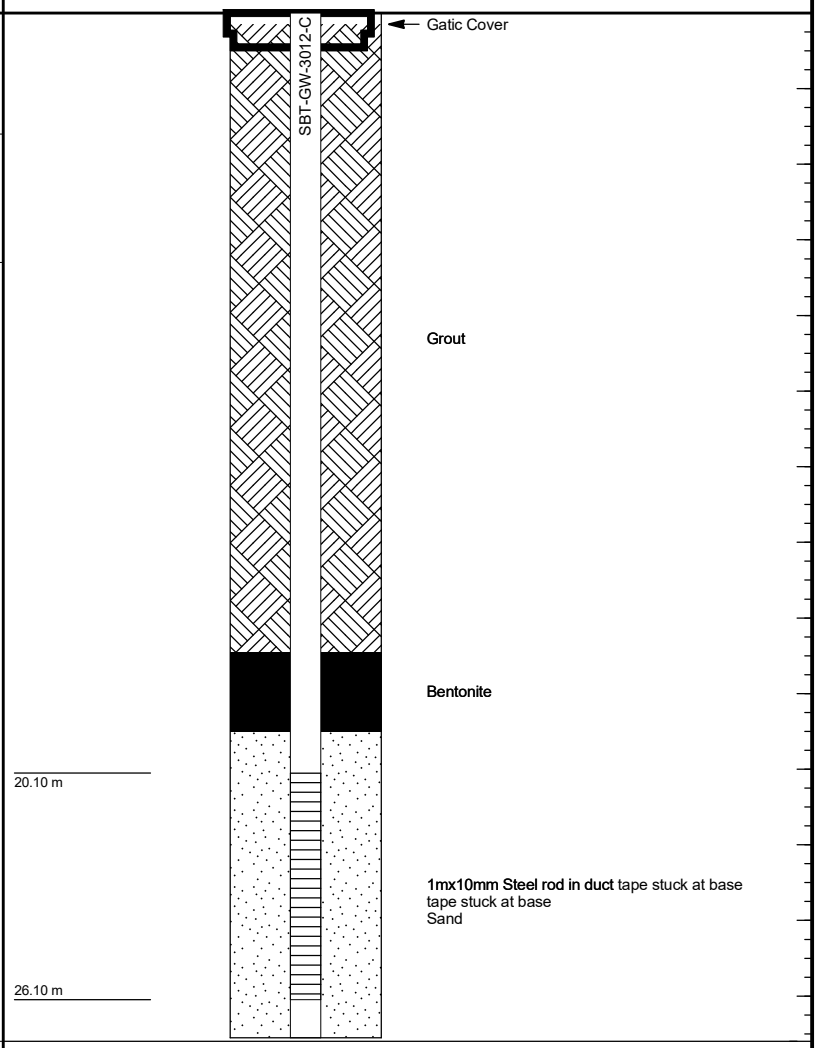
equipment type: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company: Rockwell
driller: PS
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, C	Not Observed				**FILL**
		80	4		**RESIDUAL SOIL**
					BEDROCK
		76	8		
		72	12		
HQ, N		68	16		
		64	20		
		60	24		
		56	28		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-3012-c	standpipe				27.10 m			56.86	

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drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 4**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**6/10/22**		title:	**CORE PHOTOGRAPH SBT-GW-3012-C**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 6**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4002***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Rd, Bringelly*	date started:	***21 Jun 2022***
		date completed:	***21 Jun 2022***
		logged by:	***PK***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hydropower Scout V, Truck mounted | drilling fluid: | hole diameter :

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD / C		Not Encountered	Z+J+P				CI-CH	**FILL: SANDY CLAY**: medium to high plasticity, dark brown, fine to medium grained sand, trace silt and fine grained, sub-rounded gravels, with rootlets.	~Wp - >Wp	St - VSt		**FILL:TOPSOIL**
			Z+J+P				CI	**CLAY**: medium plasticity, orange, brown with grey mottling, trace fine grained sand and silt.	~Wp			**RESIDUAL SOIL?**
			SPT 7, 9, 13 N=22		1.0			colour change to grey to pale grey with orange brown mottling inclusion of a root (##)		VSt - H	>>X >>X HP 590 kPa >>X HP >600 kPa HP >600 kPa	
								colour change to pale brown to red brown	~Wp - <Wp			
			SPT 19, 20/70mm N=R		2.0			colour changes to pale brown to brown with grey mottling			>>X >>X HP >600 kPa	**EXTREMELY WEATHERED MATERIAL** HP >600 kPa
								Borehole SBT-GW-4002 continued as cored hole				
					3.0							
					4.0							
					5.0							
					6.0							
					7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4002***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Rd, Bringelly*	date started:	***21 Jun 2022***
		date completed:	***21 Jun 2022***
		logged by:	***PK***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hydropower Scout V, Truck mounted | drilling fluid: | hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
			1.0								
			2.0		started coring at 2.40m						
HQ	Not Encountered		3.0		**SILTSTONE**: pale brown to brown, grey mottling, indistinctly laminated at 0-5°.	HW			49%		PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 0 - 5°, ST, RO, CN JT, 5 - 10°, UN, RO, CN PT, 0 - 5°, PL, RO, CN JT, 80 - 90°, UN, RO, CN JT, 0 - 5°, ST, RO, CN HB Drilling Break Drilling Break JT, 80 - 90°, ST, RO, Clay SN JT, 80 - 90°, ST, RO, Clay SN JT, 90°, UN, RO, CN JT, 80 - 90°, UN, RO, CN PT, 0 - 5°, PL, RO, CN JT, 80 - 90°, UN, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 70 - 80°, UN, RO, CN JT, 70 - 80°, UN, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 0 - 5°, UN, RO, Clay CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 70 - 80°, UN, RO, CN
			4.0		**INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%)**: fine to medium grained, pale brown to pale grey sandstone. grey to dark grey siltstone. distinctly laminated at 0-5°.	MW			78%		
			5.0		colour changes to pale grey to grey sandstone and dark grey siltstone laminations						
			6.0								Drilling Break
					50mm band of brown clay						PT, 0 - 5°, PL, RO, CN JT, 80 - 90°, UN, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
			7.0		**INTERLAMINATED SANDSTONE (80-90%) AND SILTSTONE (10-20%)**: fine to medium grained, pale grey to grey sandstone. dark grey siltstone. Distinctly laminated at 0-5°.	MW			93%		PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4002***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Rd, Bringelly*	date started:	***21 Jun 2022***
		date completed:	***21 Jun 2022***
		logged by:	***PK***
		checked by:	

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Hydropower Scout V, Truck mounted | drilling fluid: | hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Encountered				**INTERLAMINATED SANDSTONE (80-90%) AND SILTSTONE (10-20%)**: fine to medium grained, pale grey to grey sandstone. dark grey siltstone. Distinctly laminated at 0-5°. *(continued)*	MW			93%		HB PT, 0 - 5°, PL, RO, CN
					rip up clast, medium rouned gravel 50% siltstone and 50% sandstone						PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
			9.0								Drilling Break PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
					INTERLAMINATED SILTSTONE (50%) AND SANDSTONE (50%): dark grey siltstone. fine to medium grained, pale grey to grey sandstone. Distinctly laminated at 0-5°.						PT, 0 - 5°, PL, RO, CN
			10.0		**SILTSTONE**: grey to dark grey, indistinctly laminated at 0-5°.	HW - MW			70%		PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN JT, 70 - 80°, UN, RO, CN PT, 0 - 5°, PL, RO, CN
						MW					
			11.0			HW - MW					PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
			12.0			MW			96%		Drilling Break PT, 0 - 5°, PL, RO, CN PT, 0 - 5°, PL, RO, CN
					rip up clast, medium rouned gravel						JT, 0 - 5°, UN, RO, CN Drilling Break JT, 0 - 5°, UN, RO, CN
			13.0								CS, Siltstone - Gravel
			14.0								JT, 5 - 10°, UN, RO, CN
					Borehole SBT-GW-4002 terminated at 14.07 m Target depth						
			15.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-4002***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Rd, Bringelly*	date started:	***21 Jun 2022***
		date completed:	***21 Jun 2022***
		logged by:	***PK***
		checked by:	

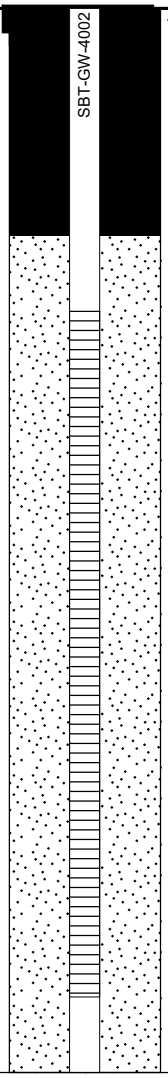
position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

equipment type: Hydropower Scout V, Truck mounted | drilling fluid: | hole diameter :

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover | bore construction license:
pvc type: | drilling company:
sand type: | driller:
grout type: | driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD, C	Not Encountered				**FILL:TOPSOIL**
					RESIDUAL SOIL?
			1		
			2		**EXTREMELY WEATHERED MATERIAL**
HQ, N			3		
			4		
			5		
			6		
			7		
			8		
			9		
			10		
			11		
			12		
			13		
			14		
			15		



Gatic Cover
Bentonite
Bentonite
Sand

method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-4002	Standpipe piezometer				14.07 m				

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TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4003***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road Bringelly*	date started:	***22 Jun 2022***
		date completed:	***23 Jun 2022***
		logged by:	***PK***
		checked by:	***VN***

position: E: 289573; N: 6245851 (GDA2020 MGA) surface elevation: 70.93 m (AHD) angle from horizontal: 90°

drill model: Hydrapower Scout, Track mounted drilling fluid: Water hole diameter :

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD, N		Not Observed					CI-CH	**TOPSOIL: Sandy CLAY**: medium to high plasticity, dark brown, fine to medium grained sand with rootlets.	>Wp			**FILL / TOPSOIL**
			E, D				CI	**CLAY**: medium plasticity, orange-brown mottled grey, trace fine grained sand.	<Wp	St		**RESIDUAL**
			SPT 4, 5, 7 N*=12	70	1.0						HP 450 kPa; >HP 420 kPa; HP 520 kPa	
			SPT 8, 12, 21 N*=33	69	2.0					VSt - H	>>HP >600 kPa	
								Borehole SBT-GW-4003 continued as cored hole			>>HP >600 kPa	**EXTREMELY WEATHERED SILTSTONE** HP >600 kPa; HP >600 kPa
				68	3.0							
				67	4.0							
				66	5.0							
				65	6.0							
				64	7.0							
				63								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: NON CORED SBT-GW-4003.GPJ <<DrawingFile>> 23/11/2022 14:40

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4003***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road Bringelly*	date started:	***22 Jun 2022***
		date completed:	***23 Jun 2022***
		logged by:	***PK***
		checked by:	***VN***

position: E: 289573; N: 6245851 (GDA2020 MGA) surface elevation: 70.93 m (AHD) angle from horizontal: 90°

drill model: Hydrapower Scout, Track mounted drilling fluid: Water hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		70	1.0							
		69	2.0	started coring at 2.40m						
HQ	Not Observed	68	3.0	**Silty CLAY (CH)**: high plasticity, pale grey with red-brown bands, with ironstone bands up to 50 mm thick (extremely weathered siltstone).	RS		d=0.07 a=0.03	100%		HP >600 kPa
				3.50 to 3.60 m: very low strength siltstone band			d=0.02 a=0.01	100%		
		67	4.0	**NO CORE:** 0.11 m						
				SILTSTONE: pale brown to brown, with sandstone beds up to 50 mm thick, distinctly laminated.	XW - HW					
					HW - MW					PT, 0 - 5°, UN, RO, CN
		66	5.0				d=0.21 a=0.31	96%		SM, Clay, 10 mm; SM, Clay, 40 mm
				SILTSTONE: dark grey, with 5% sandstone laminations, distinctly laminated.	SW					PT, 0 - 5°, PL, RO, Clay CO; PT, 5°, PL, RO, Clay CO
					FR		d=0.15 a=0.46			
		65	6.0							PT, 0°, PL, RO, Clay CO, 5 mm
		64	7.0	**INTERLAMINATED SANDSTONE (80%) AND SILTSTONE (20%)**: sandstone is fine to medium grained, siltstone dark grey, distinctly laminated between 0-5°.			d=0.28 a=0.51	100%		PT, 0°, PL, RO, CN
							d=0.16 a=2.08			
		63								PT, 0°, PL, RO, Clay CO

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-4003.GPJ <<DrawingFile>> 23/11/2022 15:17

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4003***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road Bringelly*	date started:	***22 Jun 2022***
		date completed:	***23 Jun 2022***
		logged by:	***PK***
		checked by:	***VN***

position: E: 289573; N: 6245851 (GDA2020 MGA) surface elevation: 70.93 m (AHD) angle from horizontal: 90°

drill model: Hydrapower Scout, Track mounted drilling fluid: Water hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	62	9.0	**SANDSTONE**: fine grained, pale grey, with 10% siltstone laminations, distinctly bedded between 0-5°.	FR		d=1.51 a=0.82	100%		PT, 0°, PL, RO, CN; PT, 0°, PL, RO, Clay CO; JT, 0 - 5°, UN, RO, CN; PT, 0°, PL, RO, CN
		61	10.0	**INTERBEDDED SANDSTONE (50%) AND SILTSTONE (50%)**: siltstone is dark grey with occasional sandstone laminations, sandstone is fine grained, grey to pale grey, with occasional siltstone laminations, beds are up to 300 mm thick.			d=0.10 a=0.45	89%		PT, 15°, UN, RO, CN
		60	11.0	11.30 to 11.45 m: interlaminated siltstone and sandstone band 150 mm thick			d=0.06 a=0.30; d=0.03 a=0.33			SM, Clay, 30 mm; PT, 0°, PL, RO, CN
		59	12.0	**INTERBEDDED SILTSTONE (60%) AND SANDSTONE (40%)**: siltstone is dark grey, sandstone is fine grained, grey to pale grey, beds are up to 100 mm thick.						PT, 0 - 5°, PL, RO, Clay CO; JT, 0 - 5°, UN, RO, CN; SM, Clay, 30 mm; PT, 10°, PL, RO, CN; JT, 60 - 70°, UN, tight fractured rock; JT, 20°, UN, RO, Clay CO; PT, 0 - 5°, PL, RO, CN
		58	13.0	**SILTSTONE**: dark grey, with 5% sandstone laminations.			d=0.03 a=0.25 d=0.18 a=0.48	82%		PT, 0 - 5°, PL, RO, CN; PT, 0 - 5°, PL, RO, CN; SM, Clay, 30 mm; PT, 0 - 5°, PL, RO, CN; SM, 40 mm, fractured rock with clay; PT, 0 - 5°, PL, RO, CN; PT, 0 - 5°, PL, RO, CN
		57	14.0	**SILTSTONE**: dark grey, with occasional sandstone bands up to 50 mm thick and carbonaceous laminations.			d=0.02 a=0.38			PT, 0 - 5°, UN, RO, CN
		56	15.0	**SILTSTONE**: dark grey, with occasional sandstone bands up to 50 mm thick, trace mudstone clasts up to 20 mm in diameter.			d=0.01 a=0.40	95%		
		55								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4003.GPJ <<DrawingFile>> 23/11/2022 15:17

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4003***
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road Bringelly*	date started:	***22 Jun 2022***
		date completed:	***23 Jun 2022***
		logged by:	***PK***
		checked by:	***VN***

position: E: 289573; N: 6245851 (GDA2020 MGA) surface elevation: 70.93 m (AHD) angle from horizontal: 90°

drill model: Hydrapower Scout, Track mounted drilling fluid: Water hole diameter :

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 X = axial; O = diametral VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed				15.90 to 16.00 m: mudstone clasts up to 10 mm in diameter	FR					PT, 0 - 5°, UN, RO, CN PT, 0 - 5°, UN, RO, CN
					SANDSTONE: fine grained, pale grey, massive.				95%		PT, 0°, UN, RO, CN
		54	17.0		**INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%)**: sandstone is fine to medium grained, pale grey, siltstone dark grey, distinctly laminated between 0-5°.		O X X	d=0.16 a=0.67 d=0.37 a=0.54			PT, 0°, PL, RO, Clay CO
					Borehole SBT-GW-4003 terminated at 17.29 m						
		53	18.0								
		52	19.0								
		51	20.0								
		50	21.0								
		49	22.0								
		48	23.0								
		47									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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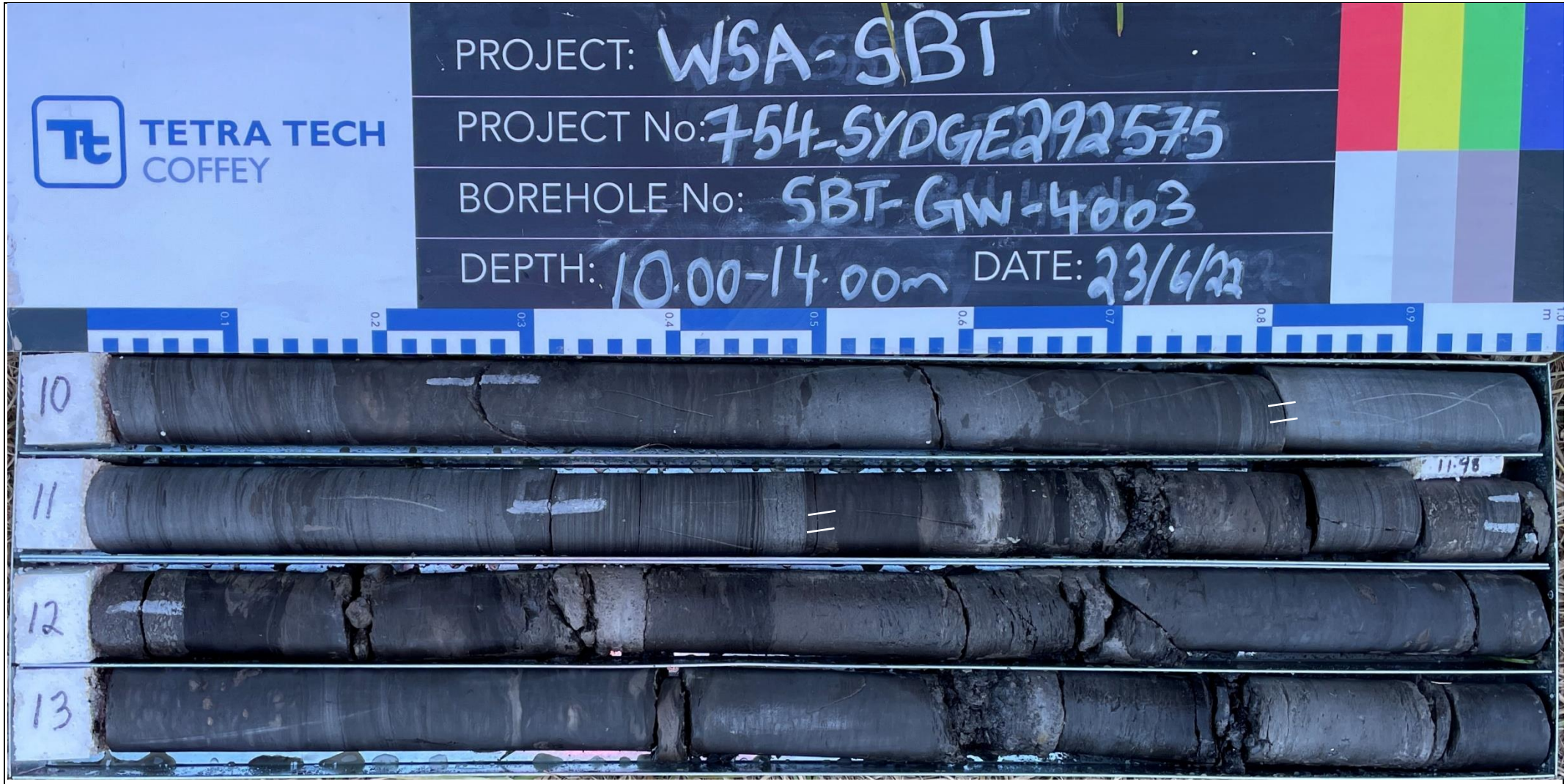
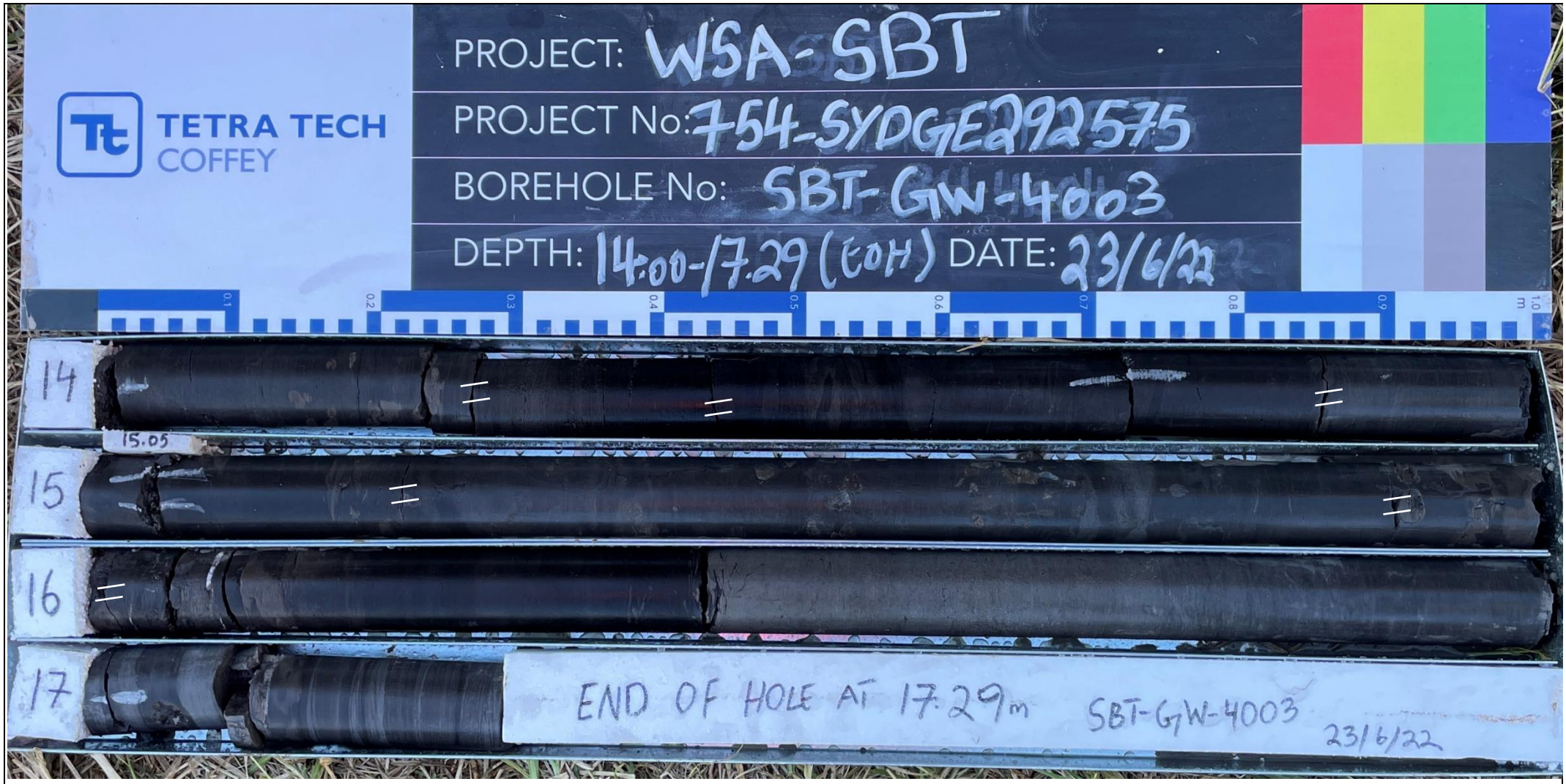
drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-BH-4003
original	A4		project no: 754-SYDGE292575	Figure 1

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date			title:	CORE PHOTOGRAPH SBT-BH-4003
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 2



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date				
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4003**
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**



drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-BH-4003
original	A4		project no: 754-SYDGE292575	Figure 4

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N		Not Observed						**FILL: Gravelly CLAY**: low plasticity, grey to dark grey, fine to coarse grained sub-rounded to angular asphaltic concrete gravel, with fine to medium grained sand, trace silt.				**FILL**
				73	1.0		CL-CH	**CLAY**: medium to high plasticity, orange-brown, trace root fibres. 0.7 m: becoming mottled orange-brown and pale grey with fine to medium grained sub-angular iron indurated gravel	<Wp	St	HP 150 kPa HP 130 kPa HP 200 kPa	**RESIDUAL**
			SPT 2, 6, 8 N*=14	72	2.0		CL-CH	**CLAY**: medium to high plasticity, pale grey, mottled orange-brown and red-brown, trace fine to medium grained sub-rounded to sub-angular iron indurated gravel.	<Wp	VSt	HP 280 kPa HP 300 kPa HP 300 kPa HP 320 kPa	
			SPT 6, 11, 16 N*=27	71	3.0		CH	**CLAY**: high plasticity, pale grey, mottled orange-brown, rock fabric visible thinly laminated, extremely weathered, inferred very low strength.		H	HP 580 kPa HP 600 kPa HP >600 kPa HP >600 kPa	**EXTREMELY WEATHERED MATERIAL**
			SPT 15, 25, 19 N*=44	70	4.0			**SILTSTONE**: grey to dark grey and orange, inferred very low to low strength, highly weathered.				**EXTREMELY WEATHERED SILTSTONE**
			SPT 31/100mm N*=R					Borehole SBT-GW-4005 continued as cored hole				
				69	5.0							
				68	6.0							
				67	7.0							
				66								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		73	1.0								
		72	2.0								
		71	3.0								
		70	4.0		started coring at 4.10m						
HQ3	Not Observed	69	5.0		**SILTSTONE**: grey to dark grey and orange-brown, indistinctly laminated, 2% fine to medium grained sub-rounded to irregular iron indurated clasts, mostly iron stained. 4.50 m: <5% iron inurated bands up to 25 mm, fine grained pale grey sandstone laminations, indistinctly laminated between 0-5°	XW - HW			100%		SM, 5°, PL, Clay, 20 mm, XW seam; PT, 5°, PL, SO, Fe SN, tight; JT, 25°, PL, SO, tight; PT, 0°, PL, SO, Fe SN
					INTERLAMINATED SANDSTONE (50%) AND SILTSTONE (50%): medium grained, pale brown, grey, siltstone is grey to dark grey, distinctly laminated at 0-5°.	HW		a=0.37	66%		JT, 80°, IR, Fe SN, tight & discontinuous; CS, 5°, PL, 20 mm, fine grained sub-angular gravel; JT, 45°, PL, Fe SN, tight; JT, 50°, PL, Fe SN, tight
		68	6.0		**SILTSTONE**: pale brown to brown.	XW					SM, 40°, PL, Fe - Clay, 80 mm, XW seam
					SILTSTONE: grey, indistinctly laminated at 0-5°.	MW		d=0.25 a=0.36			SM, 10°, PL, Fe - Clay, 10 mm, XW seam
					SANDSTONE: fine to medium grained, grey, brown, with 5-10% siltstone laminations, distinctly laminated at 0-5°.			d=0.16 a=0.57			JT, 65°, UN, SO, Fe SN; JT, 85°, ST, SO, Fe SN
		67	7.0		**SILTSTONE**: grey to dark grey, indistinctly laminated at 0-5°, minor zones of iron stainng.				68%		JT x2, 45°, ST, SO, Fe SN; JT, 85°, IR, SO, Fe SN; JT, 85°, UN, SO, tight; JT, 40°, PL, SO, Fe SN, tight
		66						d=0.02 a=0.05			JT, 65°, UN, SO, Fe SN, tight

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-4005.GPJ <<DrawingFile>> 23/11/2022 16:27

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ3	Not Observed			**SILTSTONE**: grey to dark grey, indistinctly laminated at 0-5°, minor zones of iron stainng. *(continued)*	MW			68%		SM, 0°, PL, Clay, 50 mm, XW seam; JT, 35°, PL, tight; JT, 55°, PL, SO, Fe SN
		65			SW			87%		
			9.0	fine grained pale grey sandstone laminations and beds up to 25 mm (8.45-9.08 m)			d=0.30 a=0.31; d=0.06 a=0.32			
		64	10.0				d=0.06 a=0.34	97%		JT, 35°, UN, SO, CN; CS, 10°, IR, Clay, 10 mm; SM, 25°, PL, Clay, 10 mm, XW seam
		63	11.0	**SANDSTONE**: fine to medium grained, grey and pale grey, with 5-10% siltstone laminations. 11.15 m: grading to fine grained sandstone			d=0.28 a=0.50			JT, 40°, PL, SO, CN
		62	12.0	**SILTSTONE**: dark grey, massive.	FR		d=0.34 a=0.31			PT, 5°, PL, SO, CN
		61	13.0	**SANDSTONE**: fine grained, pale grey to grey, trace dark grey siltstone lenses, distinctly laminated at 0-5°. 12.68 m: becoming pale grey-grey			d=0.17 a=0.49	100%		
		60	14.0	**INTERLAMINATED SANDSTONE (80%) AND SILTSTONE (20%)**: fine to medium grained, pale grey to grey, siltstone is dark grey, distinctly laminated at 0-5°.						PT, 0°, PL, SO, CN; PT, 0°, PL, SO, CO - Clay, 3 mm
		59	15.0				d=0.15 a=0.46			PT, PL, SO, CO - Clay, 5 mm
		58					d=0.57 a=0.49	93%		

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ3	Not Observed				FR		a=0.46 d=0.12			PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN
		57		**SANDSTONE**: pale grey, with occasional irregular siltstone laminations, dark grey.						
			17.0	**INTERBEDDED SANDSTONE (70%) AND SILTSTONE (30%)**: fine grained, pale grey to grey, siltstone is dark grey, distinctly laminated.			d=1.73 a=4.14 d=0.14 a=0.10	93%		
		56								
			18.0				d=0.94 a=1.01			
		55		**SANDSTONE**: fine grained, pale grey, distinctly laminated at 0-15°.						
			19.0	**SANDSTONE**: fine grained, pale grey, massive.						PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN PT, 0°, PL, RO, VN JT, 90°, PL, RO, CN
		54						88%		
			20.0				d=0.70 a=1.61			PT, 5°, CU, RO, CN PT, 0°, PL, SO, VN
				SILTSTONE: dark grey to grey.			d=0.07 a=0.49			
		53								
			21.0	Borehole SBT-GW-4005 terminated at 21.00 m						
		52								
			22.0							
		51								
			23.0							
		50								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

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TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-4005***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Road, Bringelly, NSW*	date started:	***24 May 2022***
		date completed:	***26 May 2022***
		logged by:	***RAS***
		checked by:	***VN***

position: E: 289667; N: 6245750 (GDA2020 MGA) surface elevation: 73.77 m (AHD) angle from horizontal: 90°

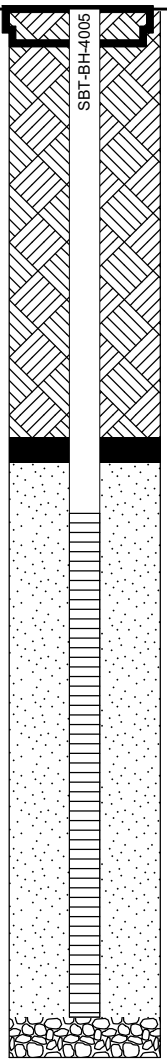
equipment type: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:

method & support	water	RL (m)	depth (m)	material description (refer to engineering log for full description)
AD/T, N	Not Observed	72		**FILL**
				RESIDUAL
				EXTREMELY WEATHERED MATERIAL
			4	**EXTREMELY WEATHERED SILTSTONE**
HQ3		68		**BEDROCK**
			8	
		64		
			12	
		60		
			16	
		56		
			20	
		52		



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-BH-4005	Standpipe piezometer				20.00 m			53.77	

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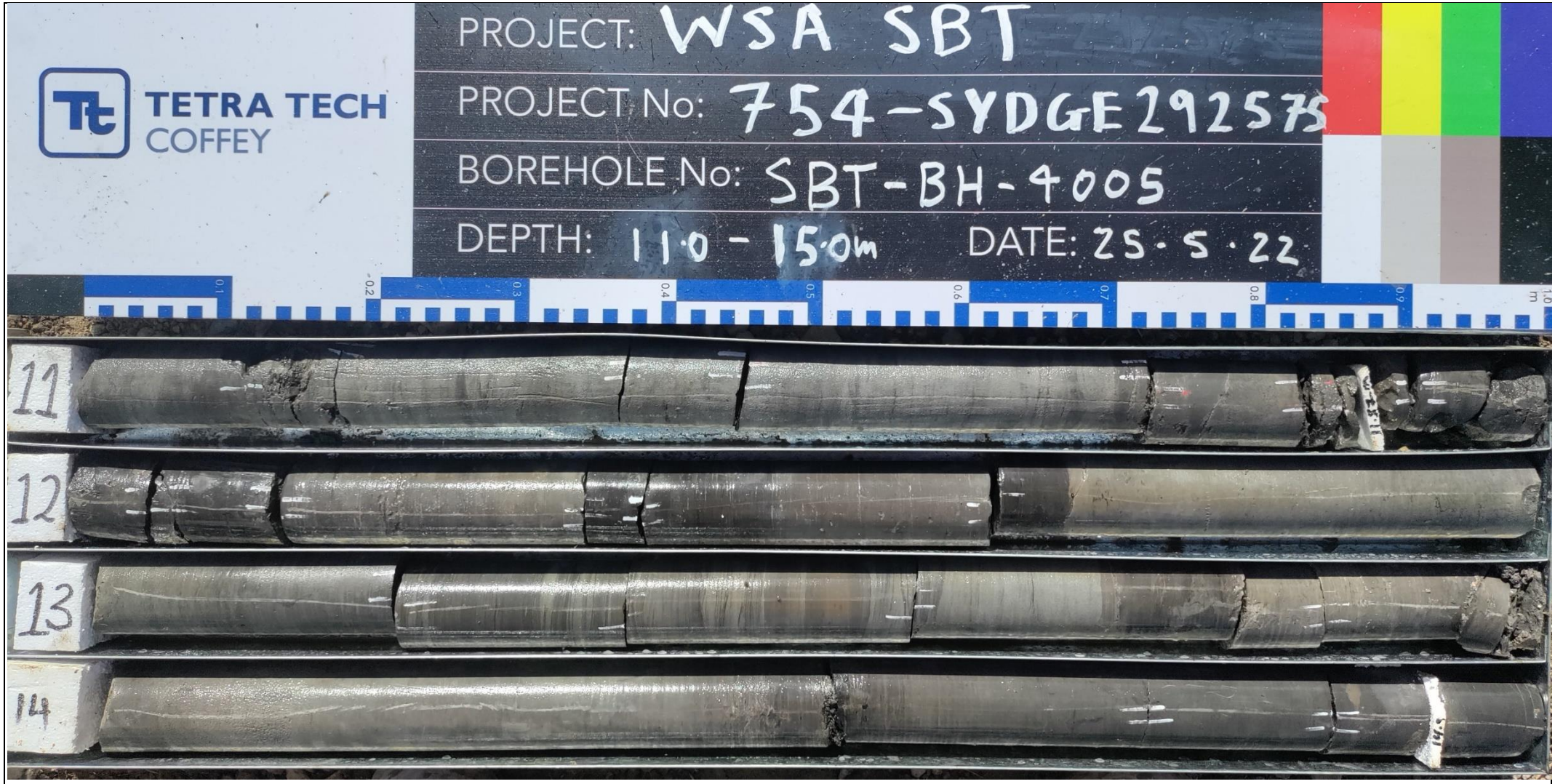
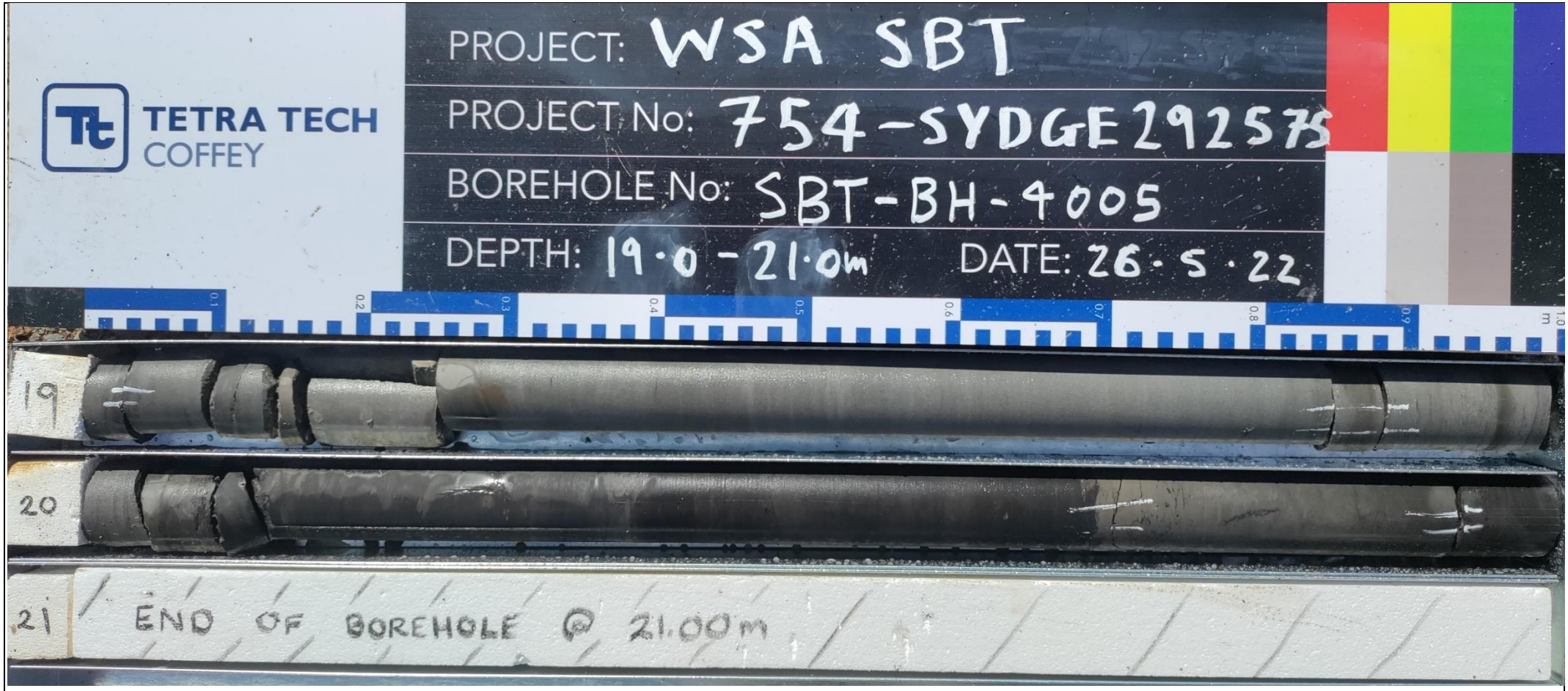
drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date				
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4005**
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4005**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4005**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4005**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 4**



drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4005**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-4017***
principal:	***Sydney Metro***	sheet:	1 of 3
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Aerotropolis***	date started:	***02 Aug 2022***
		date completed:	***03 Aug 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290806; N: 6243871 (GDA2020 MGA) surface elevation: 70.87 m (AHD) angle from horizontal: 90°

drill model: Boart Longyear DB520, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N		Not Observed					CH	**TOPSOIL**: dark grey.	>Wp	St - VSt		**TOPSOIL**
							CH	**CLAY**: high plasticity, dark grey, with root fragments.				**RESIDUAL SOIL**
				70				**CLAY**: high plasticity, orange-brown mottled pale grey.	~Wp			
			SPT 4, 9, 11 N=20		1.0			1.0 m: becoming pale grey, orange-brown			>>HP 450 kPa >>HP 570 kPa HP >600 kPa	
				69								
			SPT 10, 15/70mm HB N=R		2.0			2.0 m: brown, pale grey mottled orange-brown		H	>>HP >600 kPa HP >600 kPa	
				68								
			SPT 4, 16, 17 N=33		3.0		CH	**CLAY**: high plasticity, grey, pale brown, rock fabric evident (extremely weathered siltstone).			>>HP >600 kPa	**EXTREMELY WEATHERED MATERIAL**
				67								
			SPT 8/120mm HB N=R		4.0			Borehole SBT-GW-4017 continued as cored hole				
				66	5.0							
				65	6.0							
				64	7.0							
				63								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4017***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***02 Aug 2022***
		date completed:	***03 Aug 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290806; N: 6243871 (GDA2020 MGA) surface elevation: 70.87 m (AHD) angle from horizontal: 90°

drill model: Boart Longyear DB520, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		70	1.0							
		69	2.0							
		68	3.0							
		67	4.0	started coring at 4.00m						
HQ3	Not Observed	66	5.0	**SILTSTONE**: brown, dark brown, with brown iron stain.	HW		d=0.02 a=0.25			HP >600 kPa; PT, 2°, IR, RO, CO
				SILTSTONE: dark grey, distinctly bedded at 0-5°, with 5-10% sandstone laminations and brown iron stain.	MW		d=0.12 a=0.57	87%		PT, 2°, UN, RO, CO; PT, 2°, IR, RO, VN; JT, 85°, IR, RO, VN, 60-85°; PT, 1°, IR, RO, CO
		65	6.0	**SILTSTONE**: dark grey, indistinctly bedded, trace fine grained pale grey sandstone.						PT, 3°, IR, RO, CO; PT, 15°, PL, SO, VN; JT, 45°, CU, VN, 10-45°; PT, 5°, UN, SL, VN; PT, 7°, UN, RO, VN
		64	7.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: siltstone is dark grey, sandstone is pale grey, sandstone is pale grey, distinctly laminated at 0-5°.	SW		d=0.04 a=0.45	92%		PT, 3°, UN, SL, VN; PT, 3°, IR, RO, CO; PT, 2°, UN, RO, CO
		63		**SILTSTONE**: dark grey, indistinctly bedded, with brown stains.			d=0.20 a=0.34			PT, 3°, UN, RO, CO

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4017.GPJ <<DrawingFile>> 23/11/2022 16:20

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4017***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***02 Aug 2022***
		date completed:	***03 Aug 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290806; N: 6243871 (GDA2020 MGA) surface elevation: 70.87 m (AHD) angle from horizontal: 90°

drill model: Boart Longyear DB520, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ3	Not Observed			**SILTSTONE**: dark grey, indistinctly bedded, with brown stains. *(continued)*	SW		d=0.27 a=0.30			PT, 3°, UN, SL, CO; JT, 45°, IR, RO, CN, 30-45°
		62	9.0	8.58 m: becoming grey, pale grey				92%		PT, 5°, UN, SL, VN
							d=0.01 a=0.46			JT, 30°, UN, SL, VN; JT, 20°, UN, SL, CO
		61	10.0	**NO CORE:** 0.13 m						SM, 5°, IR, RO, CN, 50 mm
				SILTSTONE: dark grey, grey, indistinctly bedded, trace brown stains.	SW		d=0.06 a=0.14			PT, 5°, IR, RO, CN; PT, 2°, UN, SL, VN; PT, 3°, UN, SL, VN
		60	11.0					88%		PT, 15°, PL, SO, CN
		59	12.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: siltstone is dark grey, sandstone is fine grained, pale grey, distinctly laminated at 0-5°.	FR		d=0.36 a=0.91			JT, 45°, CU, SO, CN, 10-45°
		58	13.0	**SANDSTONE**: fine grained, pale grey, trace siltstone bands.			d=0.17 a=0.98	100%		JT, 7°, UN, SL, VN
		57	14.0	Borehole SBT-GW-4017 terminated at 13.50 m Target depth						
		56	15.0							
		55								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-4017.GPJ <<DrawingFile>> 23/11/2022 16:20

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4017**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4017**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4017**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-4019***
principal:	***Sydney Metro***	sheet:	1 of 4
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Aerotropolis***	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N		Not Observed						**FILL: Silty CLAY**: high plasticity, dark grey, with fine to coarse gravel, roots.	>Wp			**FILL**
							CH	**CLAY**: high plasticity, pale grey mottled red-brown, with fine to coarse gravel.	<Wp	St - VSt		**RESIDUAL SOIL**
				74								
			SPT 10, 3/20mm HB N=R		1.0			1.0 m: becoming brown 1.05 m: clay becoming powdery		H	>>HP 500 kPa HP >600 kPa	
				73				1.7 m: becoming dark red, pale grey	=Wp			
			SPT 6, 8/60mm HB N=R		2.0			2.0 m: becoming brown, pale grey			>>HP >600 kPa HP >600 kPa	
				72								
			SPT 7/60mm HB N=R		3.0			3.03 m: powdery clay			>>HP >600 kPa	
								3.5 m: becoming dark grown, grey				
				71				3.8 m: SILTSTONE fragments encountered				
			SPT 14/110mm HB N=R		4.0			**SILTSTONE**: dark grey, extremely weathered, very low - low strength.			>>HP >600 kPa	**EXTREMELY WEATHERED SILTSTONE**
								Borehole SBT-GW-4019 continued as cored hole				
				70	5.0							
				69	6.0							
				68	7.0							
				67								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: NON CORED SBT-GW-4019.GPJ <<DrawingFile>> 23/11/2022 16:30

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4019***
principal:	*Sydney Metro*	sheet:	2 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		74	1.0								
		73	2.0								
		72	3.0								
		71	4.0		started coring at 4.20m						
HQ	Not Observed	70	5.0		**NO CORE:** 0.10 m **SILTSTONE**: dark grey, grey.	HW			86%		JT, 85°, healed, 70-85° JT, 85°, healed, 75-85°
		69	6.0		**NO CORE:** 0.08 m **SILTSTONE**: dark grey, grey-brown, with orange-brown stains.	HW			81%		PT, 2°, healed PT, 2°, healed JT, 80°, UN, RO, Fe SN PT, 4°, PL, RO, Fe SN JT, 60°, UN, RO, Fe SN
		68	7.0		**NO CORE:** 0.10 m **SILTSTONE**: dark grey, with 10% sandstone laminations, distinctly laminated at 0-10°.	MW	O-X O-X	d=0.02 a=0.11 d=0.09 a=0.18	86%		PT, 3°, UN, SL, CO JT, 60°, UN, SL, CO
		67									PT, 10°, UN, SL, CO

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4019.GPJ <<DrawingFile>> 23/11/2022 16:30

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	***CPB Ghella***	Borehole ID.	***SBT-GW-4019***
principal:	***Sydney Metro***	sheet:	3 of 5
project:	***WSA SBT***	project no.	***754-SYDGE292575***
location:	***Aerotropolis***	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed			**SILTSTONE**: dark grey, with 10% sandstone laminations, distinctly laminated at 0-10°. *(continued)*	MW					PT, 5°, UN, SL, CO
		66	9.0	**INTERLAMINATED SILTSTONE (50%) AND SANDSTONE (50%)**: dark grey, sandstone is fine grained, grey, pale grey, distinctly laminated at 0-5°.	SW - FR		d=0.05 a=0.47	86%		
							d=0.03 a=0.49			
		65	10.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: dark grey, sandstone is fine to medium grained, pale grey, distinctly laminated at 0-15°.			d=0.02 a=0.32			
		64	11.0	**SILTSTONE**: dark grey, distinctly laminated at 0-5°, with 5% sandstone laminations.	FR		d=0.10 a=0.97	100%		
		63	12.0	**SILTSTONE**: dark grey, with 5-10% sandstone laminations, distinctly laminated at 0-5°.			d=0.05 a=0.27			JT, 45°, IR, RO, CO
		62								PT, 5°, PL, SL, CO
			13.0	**SANDSTONE**: fine grained, pale grey, with 5-10% irregular siltstone laminations, dark grey, indistinctly laminated.			d=0.06 a=0.27			PT, 10°, UN, SL, VN, 5-10° PT, 5°, UN, SL, VN, 2-5°
		61	14.0	**SILTSTONE**: dark grey, with 5% sandstone laminations.			d=0.09 a=0.28			
				SANDSTONE: fine grained, pale grey, with 10% siltstone laminations.						
		60	15.0	**SILTSTONE**: dark grey, with 5% irrgular sandstone laminations.			d=0.01 a=0.32			
		59						96%		

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4019.GPJ <<DrawingFile>> 23/11/2022 16:30

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4019***
principal:	*Sydney Metro*	sheet:	4 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	58	17.0	**SILTSTONE**: dark grey, with 5% irrgular sandstone laminations. *(continued)*	FR	d=0.18 a=0.57	96%		PT, 10°, UN, SL, VN, 3-10°; PT, 20°, UN, SL, VN, 5-20
		57	18.0	**INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%)**: dark grey, sandstone is fine grained, grey to pale grey, distinctly laminated at 0-5°.		d=0.07 a=0.58			
		56	19.0	**SANDSTONE**: fine grained, pale grey, distinctly laminated at 0-5°.		d=0.17 a=0.92	99%		
		55	20.0	**SILTSTONE**: dark grey, distinctly laminated at 0-5°, with 5% sandstone laminations.		d=0.17 a=0.27			PT, 4°, IR, RO, VN
		54	21.0	**INTERLAMINATED SANDSTONE (80%) AND SILTSTONE (20%)**: fine grained, pale grey, siltstone is dark grey, distinctly laminated at 0-5°.		d=0.07 a=0.45; d=0.14 a=0.94			JT, 60°, UN, RO, CN, 30-60°
		53	22.0			d=0.47 a=1.10			
		52	23.0	**SANDSTONE**: fine grained, pale grey, trace dark grey siltstone.			100%		
		51		**SILTSTONE**: dark grey, with 5-10% sandstone laminations, distinctly laminated at 0-10°.		d=0.17			

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY (1).GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4019.GPJ <<DrawingFile>> 23/11/2022 16:30

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4019***
principal:	*Sydney Metro*	sheet:	5 of 5
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Jul 2022***
		date completed:	***28 Jul 2022***
		logged by:	***DZ***
		checked by:	***VN***

position: E: 290670; N: 6243885 (GDA2020 MGA) surface elevation: 74.79 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: Water hole diameter : 100 mm

drilling information				material substance					rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	50	25.0		**SILTSTONE**: dark grey, with 5-10% sandstone laminations, distinctly laminated at 0-10°. *(continued)*	FR		a=0.72 d=0.02 a=0.42	100% 91%		JT, 45°, CU, RO, CN, 20-45°
		49	26.0		Borehole SBT-GW-4019 terminated at 25.00 m Target depth						
		48	27.0								
		47	28.0								
		46	29.0								
		45	30.0								
		44	31.0								
		43									

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method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

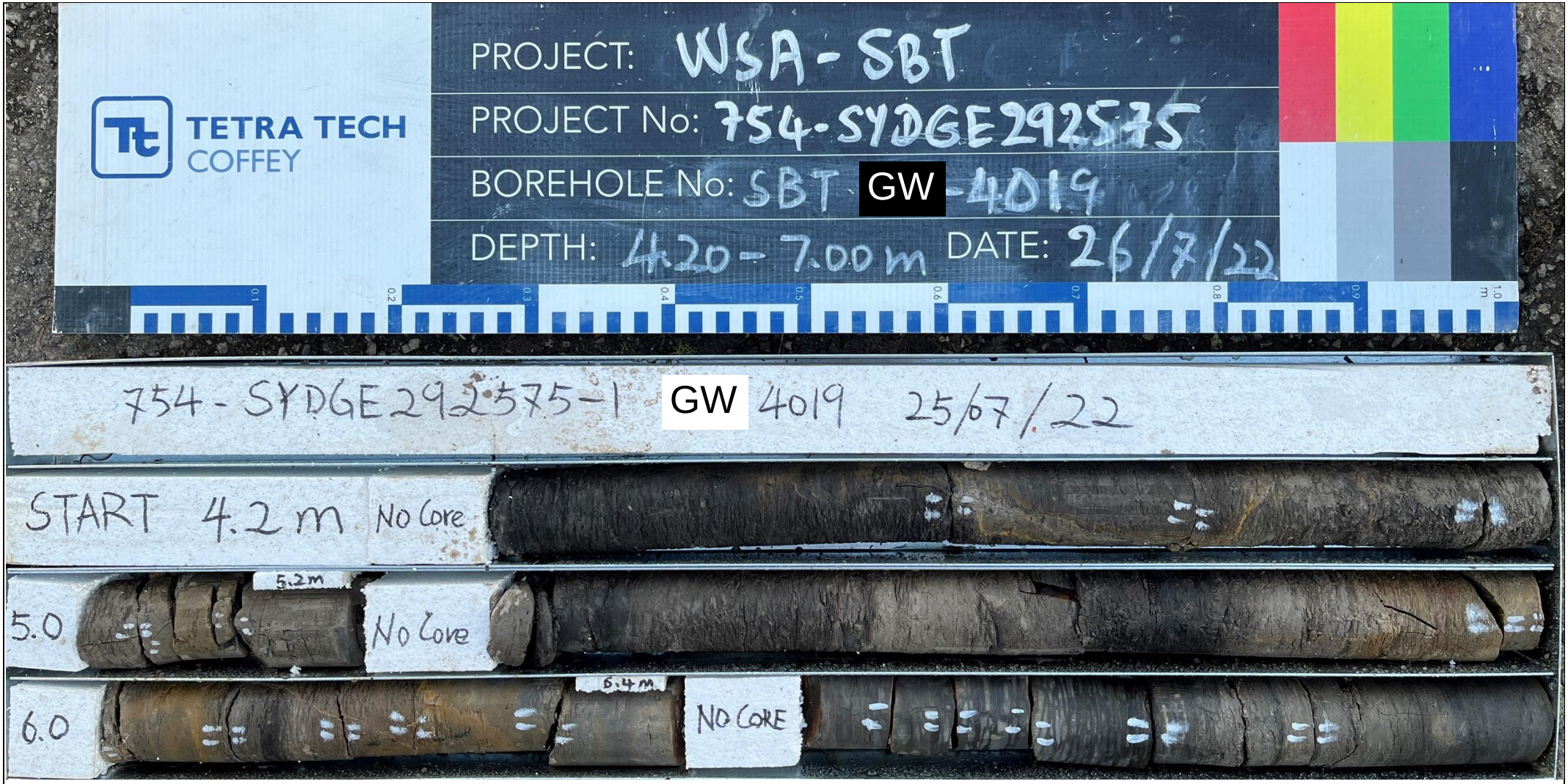
strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

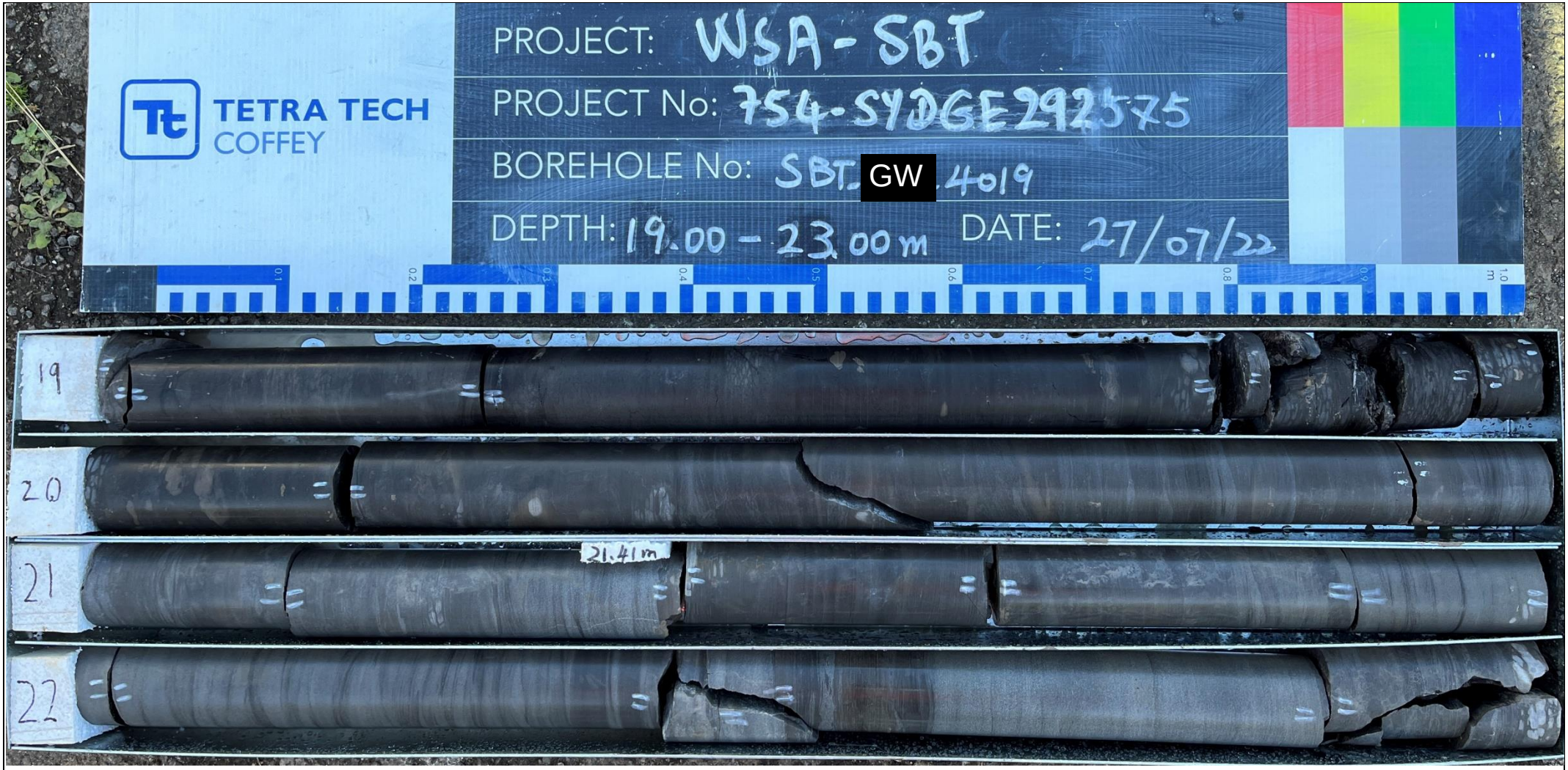


drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	28/10/2022			
scale	N/A		title:	CORE PHOTOGRAPH SBT-BH-4019
original	A4		project no: 754-SYDGE292575	Figure 4



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 5**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**28/10/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-BH-4019**
original	**A4**		project no: **754-SYDGE292575**	**Figure 6**

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4020***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street Bringelly*	date started:	***31 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF/MR***
		checked by:	

position: E: 289584; N: 6245841 (GDA2020 MGA) surface elevation: 71.20 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N			E	71				**FILL: Silty CLAY**: medium plasticity, brown, red, with roots and rootlets.	M			**FILL**
			E				CH	**CLAY**: high plasticity, red, trace fine to medium grained sub-rounded gravel.		VSt		**RESIDUAL SOIL**
			SPT 3, 9, 11 N*=20	70	1.0							HP 250 kPa HP 360 kPa HP 440 kPa
			SPT 5, 10, 14 N*=24	69	2.0						>>>HP 600 kPa >>>HP >600 kPa	HP >600 kPa
								Borehole SBT-GW-4020 continued as cored hole				
				68	3.0							
				67	4.0							
				66	5.0							
				65	6.0							
				64	7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4020***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street Bringelly*	date started:	***31 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF/MR***
		checked by:	

position: E: 289584; N: 6245841 (GDA2020 MGA) surface elevation: 71.20 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		71									
			1.0		not encountered						
		70									
			2.0								
		69			started coring at 2.35m						
HQ			3.0		**CLAY**: high plasticity, grey, mottled red, with fine iron indurated gravel (extremely weathered siltstone).	RS		a=0.05 d=0.05			Residual
		68			**SILTSTONE**: pale grey to grey, mottled brown, indistinctly bedded between 0-5° with iron stone gravel and iron staining.	XW					Ex W material; CS, Fe SN, 150 mm
			4.0					a=0.03 d=0.03			SM, 0 - 5°, Clay, 40 mm
		67			**SILTSTONE**: dark grey, mottled orange brown, with thin iron indurated sandstone bands, distinctly interlmainated between 0-5°.	HW - MW			78%		Bedrock; JT, 80°, IR, RO, Fe SN; SM, 0 - 5°, Clay, 20 mm; SM, 0 - 5°, Clay, 10 mm; PT, 10°, IR, RO, CO - Clay
					INTERLAMINATED SILTSTONE (60%) AND SANDSTONE (40%): sandstone is grey, distinctly cross-bedded between 0-10° with iron indurated bands.			a=0.28 d=0.05			PT, 10°, PL, RO, Fe SN; PT, 0°, PL, RO, Fe SN
			5.0								SM, 0 - 10°, Clay, 15 mm; SM, 0 - 5°, Clay, 50 mm
		66				SW - MW					PT, 5°, PL, RO, Fe SN; JT, 80°, PL, RO, Fe SN; PT, 0°, PL, RO, Fe SN; CS, 0 - 5°, 10 mm, clay & crushed rock
					5.59 m: iron stone gravel						
			6.0		**SANDSTONE**: fine to medium grained, pale brown to grey, with 1-% siltstone laminations, distinctly laminated between 0-5°. 6.04 m: becoming 80% sandstone, 20% siltstone			a=0.71 d=0.25			PT, 5°, PL, RO, Fe SN; PT, 5°, PL, RO, Fe SN
		65						a=1.30 d=0.37			PT, 35°, PL, RO, VN - Clay; PT, 10°, PL, RO, CN
			7.0		6.74 to 6.76 m: iron indurated band; 6.85 to 7.11 m: iron indurated zone				88%		PT, 0°, PL, RO, Fe SN; JT, 80°, PL, RO, Fe SN; JT, 35°, PL, RO, Fe SN; PT, 5°, PL, RO, Fe SN
		64			7.29 m: iron induration disappears	FR					PT, 5°, PL, RO, CN
					7.77 m: becoming 50% siltstone, 50% sandstone						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4020.GPJ <<DrawingFile>> 31/10/2022 12:42

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4020***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street Bringelly*	date started:	***31 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF/MR***
		checked by:	

position: E: 289584; N: 6245841 (GDA2020 MGA) surface elevation: 71.20 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ		63			**SANDSTONE**: fine to medium grained, pale brown to grey, with 1-% siltstone laminations, distinctly laminated between 0-5°. *(continued)*	FR		a=0.68 d=0.34			
								a=1.10 d=0.55	88%		PT, 10°, PL, RO, CN; PT, 10°, PL, RO, CN; JT, 85°, IR, RO, CN
					8.71 to 8.85 m: sandstone band						
			9.0								
		62			9.09 to 9.11 m: carbonaceous bands						
					9.42 to 9.47 m: shale band 50 mm			d=5.12 a=0.69			JT, 20°, PL, RO, Fe SN
			10.0								
		61							89%		
					10.69 to 10.79 m: weathered seam in rock						
			11.0					a=0.82 d=0.63			
		60			11.24 m: siltstone gravel			a=0.77 d=0.05			PT, 0°, PL, RO, CN; PT, 10°, PL, RO, VN - Clay
			12.0		**SILTSTONE**: dark grey-grey, indistinctly bedded between 0-5°, trace occasional sandstone gravel. 12.04 to 12.47 m: weathered band with ridges	SW - FR					PT, 10°, PL, RO, CO - Clay
		59						a=0.39 d=0.17			
			13.0								PT, 0°, IR, RO, VN - Clay
		58			13.11 to 13.48 m: weathered zone with ridges				98%		
											PT, 10°, PL, RO, VN - Clay
			14.0					a=0.41 d=0.06			
		57									PT, 0°, PL, RO, CN
								a=0.33 d=0.17			
					14.53 to 14.72 m: interlaminated bands 70% sandstone, 30% siltstone						
			15.0								
		56						a=0.46 d=0.04			
					SANDSTONE: fine to medium grained, grey, with 5% siltstone laminations.				98%		
					SILTSTONE: dark grey, indistinctly bedded						PT, 10°, PL, VR, CO, clay & crushed rock

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4020.GPJ <<DrawingFile>> 31/10/2022 12:42

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4020***
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street Bringelly*	date started:	***31 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF/MR***
		checked by:	

position: E: 289584; N: 6245841 (GDA2020 MGA) surface elevation: 71.20 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8, Track mounted drilling fluid: Water hole diameter : 115 mm

drilling information				material substance							rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ		55			between 0-5°, trace occasional sandstone gravel. **SILTSTONE**: dark grey, indistinctly bedded between 0-5°, trace occasional sandstone gravel. *(continued)*	SW - FR		a=0.46 d=0.06	98%		PT, 10°, PL, VR, CO, clay & crushed rock
		54	17.0		**INTERLAMINATED SILTSTONE (50%) AND SANDSTONE (50%)**: dark grey, sandstone is fine grained, pale grey, distinctly laminated between 0-5°.	FR		a=0.56 d=0.25			PT, 5°, PL, RO, CN
					Borehole SBT-GW-4020 terminated at 17.24 m Target depth						
		53	18.0								
		52	19.0								
		51	20.0								
		50	21.0								
		49	22.0								
		48	23.0								

method
DT diatube
NMLCNMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

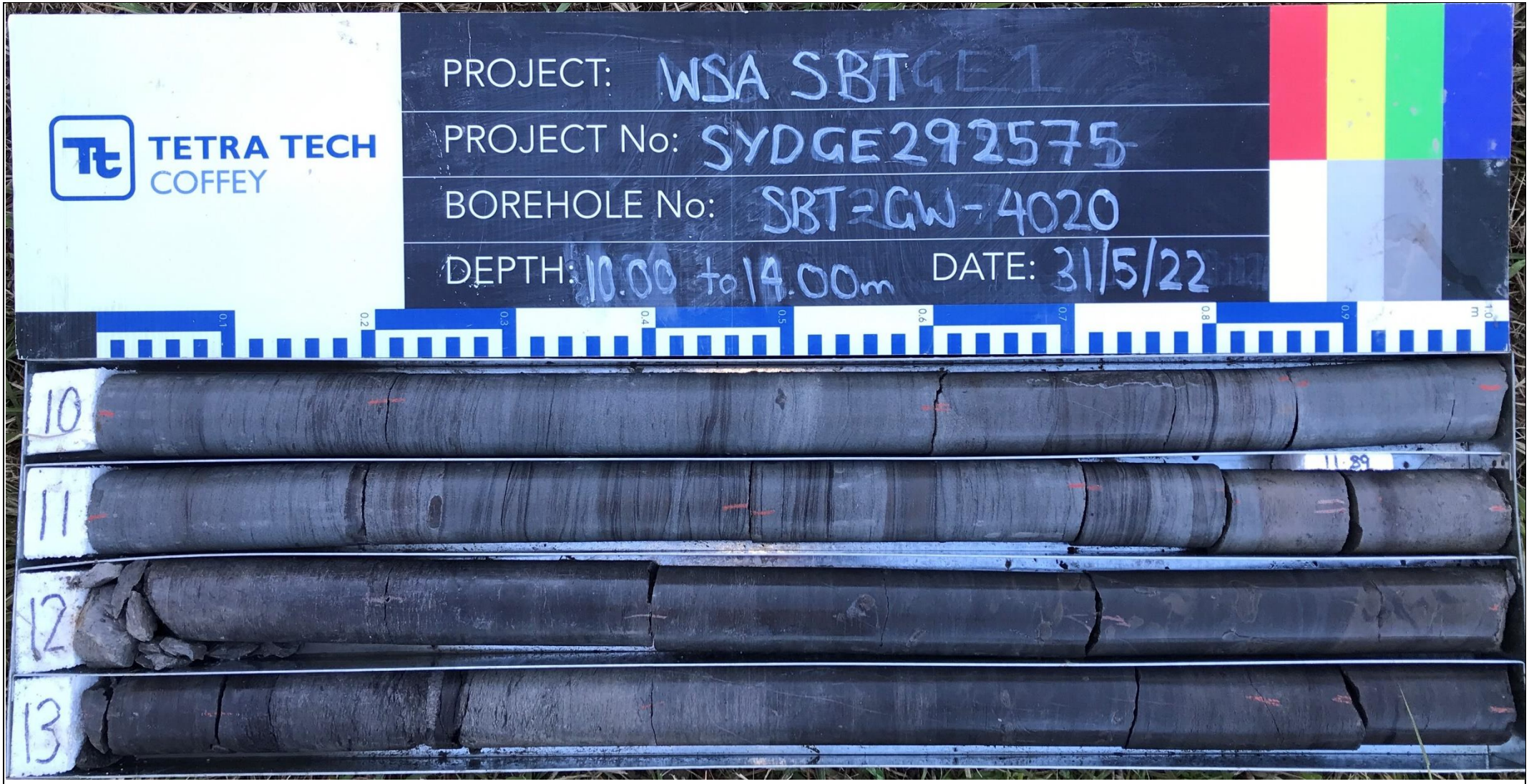
roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

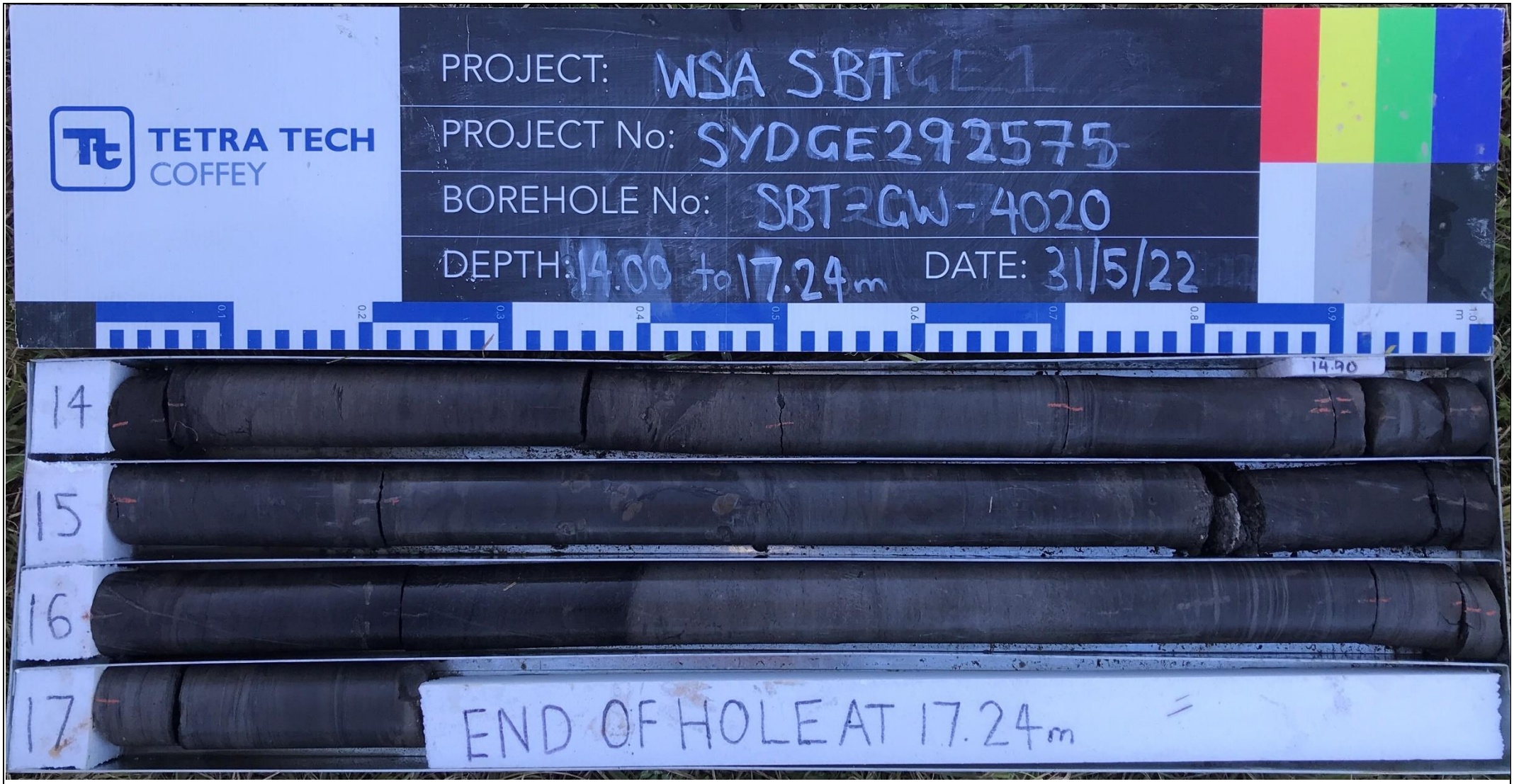
CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4020.GPJ <<DrawingFile>> 31/10/2022 12:42

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**		title:	**CORE PHOTOGRAPH SBT-GW-4020**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-4020**
original	**A4**		project no: **754-SYDGE292575**	**Figure 2**



drawn	**LDR**	TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date	**23/09/2022**			
scale	**N/A**		title:	**CORE PHOTOGRAPH SBT-GW-4020**
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**



drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	23/09/2022		title:	CORE PHOTOGRAPH SBT-GW-4020
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 4

TETRA TECH COFFEY

Engineering Log - Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4021***
principal:	*Sydney Metro*	sheet:	1 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Aug 2022***
		date completed:	***26 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 291112; N: 6243748 (GDA2020 MGA) surface elevation: 61.82 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T; C		Not Observed					CH-MH	**Clayey SILT**.	M			**TOPSOIL**
							CH-MH	**Clayey SILT**: high liquid limit, grey-brown.	~Wp	St		**POSSIBLE ALLUVIUM**
								Silty CLAY: high plasticity, yellow-brown, some rounded ironstone gravel.				
				61	1.0							
			SPT 5, 4, 5 N=9									HP 200 - 300 kPa
				60	2.0		SC-SM	**Silty CLAYEY SAND**: fine to coarse grained, high plasticity, grey mottled orange-brown.	>Wp			
			SPT 4, 3, 5 N=8	59	3.0							HP 60 - 120 kPa
				58	4.0		GC	**CLAYEY GRAVEL**: fine to coarse grained, sub-rounded.	<Wp			
			SPT 30/100mm HB N=R					**SANDSTONE**: fine grained, orange-brown, with SHALE laminations. Borehole SBT-GW-4021 continued as cored hole				**EXTREMLEY WEATHERED SANDSTONE**
				57	5.0							
				56	6.0							
				55	7.0							
				54								

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- N nil
- C casing

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4021***
principal:	*Sydney Metro*	sheet:	2 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Aug 2022***
		date completed:	***26 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 291112; N: 6243748 (GDA2020 MGA) surface elevation: 61.82 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		61	1.0								
		60	2.0								
		59	3.0								
		58	4.0		started coring at 4.10m						
HQ	Not Observed	57	5.0		**SANDSTONE**: fine grained, orange-brown, with siltstone laminations.	HW		d=0.05 a=0.05	83%		JT, 85°, UN, SO, Fe VN SM, 5°, PL, SO, Clay filled, 20 mm PT, 10°, PL, SO, Fe SN
		56	6.0		**SILTSTONE**: grey to dark grey. 5.56 to 5.59 m: sideritic/FeOH band	XW MW		d=0.13 a=0.28			SM, 10°, PL, SO, Clay filled, 130 mm PT, 5°, PL, SO, Coal, 4 mm JT, 20°, PL, SO, sideritic VN SM, 10°, PL, SO, Clay filled, 8 mm
		55	7.0		**SANDSTONE**: fine grained, grey, pale grey, with 5-10% siltstone laminations, distinctly laminated at 0-5°.	SW - FR		d=0.58 a=1.26 d=0.65 a=0.97	81%		PT, 10°, PL, SO, Fe SN PT, 10°, PL, SO, Fe SN PT, 5°, PL, SO, Fe SN PT, 10°, PL, SO, CN, silt lamination JT, 40°, PL, SO, CN PT, 10°, PL, SO, silt lamination PT, 10°, PL, SO, PTs, silt laminations
		54									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
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FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-4021.GPJ <<DrawingFile>> 24/11/2022 11:02

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4021***
principal:	*Sydney Metro*	sheet:	3 of 3
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Aug 2022***
		date completed:	***26 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 291112; N: 6243748 (GDA2020 MGA) surface elevation: 61.82 m (AHD) angle from horizontal: 90°

drill model: Geoprobe, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ	Not Observed	53	9.0		**INTERBEDDED SANDSTONE (80%), SILTSTONE (20%)**: sandstone is fine grained, pale grey, siltstone is dark grey, distinctly laminated at 0-10°.	SW - FR		d=0.93 a=1.15	81%		PT, 10°, PL, SO, shale/sandstone split; PT, 10°, PL, SO, PTs, silt laminations; JT, 88°, PL, RO, VN, sideritic; PT, 10°, PL, SO, silt lamination; PT, 10°, PL, SO, silt lamination; PT, 15°, PL, RO, silt lamination
		52	10.0		**SANDSTONE**: fine grained, pale grey, grey, with siltstone bands up o 100mm thick. 9.58 to 9.68 m: sideritic alteration			d=1.61 a=3.52; d=0.15 a=0.41	85%		
		51	11.0		10.36 to 10.63 m: Carbonaceous shale: grey to black; **SILTSTONE**: dark grey, grey, with irregular sandsone laminations.	MW; FR					
		50	12.0		11.63 to 11.77 m: black carbonaceous shale			d=0.22 a=0.37			
		49	13.0		Borehole SBT-GW-4021 terminated at 12.00 m Target depth						
		48	14.0								
		47	15.0								
		46									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
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*W replaced with A for alteration

strength
VL very low
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M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF BOREHOLE: CORED SBT-GW-4021.GPJ <<DrawingFile>> 24/11/2022 11:02

TETRA TECH COFFEY

Piezometer Installation Log

DRAFT

client:	*CPB Ghella*	Hole ID.	***SBT-GW-4021***
principal:	*Sydney Metro*	sheet:	1 of 1
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*Aerotropolis*	date started:	***25 Aug 2022***
		date completed:	***26 Aug 2022***
		logged by:	***JE***
		checked by:	***VN***

position: E: 291112; N: 6243748 (GDA2020 MGA) surface elevation: 61.82 m (AHD) angle from horizontal: 90°

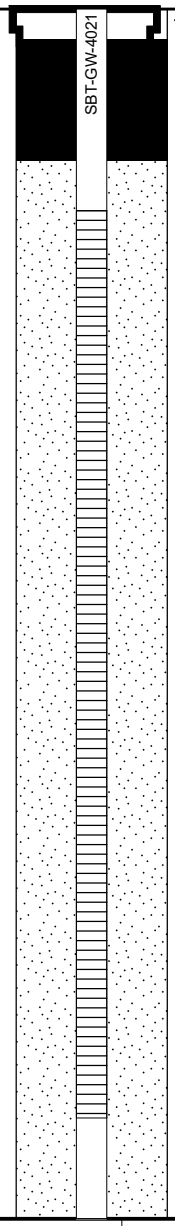
equipment type: Geoprobe, Track mounted drilling fluid: water hole diameter : 110 mm

drilling information | **material substance** | **piezometer construction details**

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company: Stratacore
driller: DM
driller's permit no.:

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, C, HQ, N	Not Observed	60, 58, 56, 54, 52, 50	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11		**TOPSOIL** **POSSIBLE ALLUVIUM** **EXTREMLEY WEATHERED SANDSTONE** **BEDROCK**



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
SBT-GW-4021	standpipe				12.00 m			49.82	

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log_COF PIEZOMETER ONE PAGE SUMMARY SBT-GW-4021.GPJ <<DrawingFile>> 24/11/2022 10:50

drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	28/10/2022		title:	CORE PHOTOGRAPH SBT-BH-4021
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 1

drawn	LDR	TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date	28/10/2022		title:	CORE PHOTOGRAPH SBT-BH-4021
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 2

TETRA TECH COFFEY

DRAFT

Engineering Log - Borehole

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4022***
principal:	*Sydney Metro*	sheet:	1 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street, Bringelly*	date started:	***27 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF***
		checked by:	

position: E: 289586; N: 6245762 (GDA2020 MGA) surface elevation: 74.44 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N				74			CH	**FILL: Sandy GRAVEL**: fine to coarse grained, sub-rounded to sub-angular, grey, fine to medium sand.	D	St - VSt		**FILL**
								CLAY: high plasticity, red to brown, trace root and root fibres.	>Wp			**RESIDUAL SOIL**
			SPT 2, 7, 10 N=17	73	1.0		CH	**CLAY**: high plasticity, pale grey mottled red.	<Wp	VSt		HP 390 kPa HP 400 kPa HP 400 kPa
			SPT 9, 13, 22 N=35	72	2.0			2.0 m: becoming pale grey mottled red-brown		H		HP >600 kPa HP >600 kPa HP >600 kPa
				71	3.0			Borehole SBT-GW-4022 continued as cored hole				
				70	4.0							
				69	5.0							
				68	6.0							
				67	7.0							

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud N nil
C casing

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

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TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4022***
principal:	*Sydney Metro*	sheet:	2 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street, Bringelly*	date started:	***27 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF***
		checked by:	

position: E: 289586; N: 6245762 (GDA2020 MGA) surface elevation: 74.44 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
		74									
			1.0								
		73									
			2.0								
		72			started coring at 2.60m						
HQ					**CLAY**: high plasticity, pale grey mottled red, trace fine to medium, sub-angular gravels.	RS					
					CLAY: high plasticity, pale grey with red-brown and and orange-brown bands, with very low strength siltstone bands up to 300 mm thick and ironstone bands up to 60 mm thick, rock texture evident (extremely weathered siltstone). 3.10 to 3.40 m: Siltstone: brown and red-brown, very low strength	XW					SM, Clay, 20 mm SM, Clay, 10 mm PT, 0°, PL, Clay CO, 3 mm PT, 0°, PL, RO, Clay, 4 mm JT, 40°, PL, RO, Clay CO, 5 mm
			3.0								
		71									
			4.0								PT, 0°, PL, RO, Fe SN
		70			4.40 m: very low strength ironstone band, 50 mm thick						
			5.0								PT, 10°, PL, RO, Clay VN
		69									
					SILTSTONE: grey-brown and dark grey, distinctly laminated.	HW					JT, 85°, PL, RO, Clay VN
			6.0								
		68									SM, Clay, 50 mm
					SILTSTONE: dark grey, with 5% sandstone laminations, distinctly laminated.	SW			69%		
			7.0								PT, 0°, PL, RO, SN - Fe
		67									
					Between 7.60 to 7.80 m: grey mottled brown to orange	HW					SM, Clay, 20 mm PT x6, 0 - 5°, PL, RO, Fe, Clay CO
					From 7.80 m: pale grey could be claystone or fine	FR					JT, 20°, PL, RO, Fe, Clay VN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4022.GPJ <<DrawingFile>> 31/10/2022 12:28

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4022***
principal:	*Sydney Metro*	sheet:	3 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street, Bringelly*	date started:	***27 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF***
		checked by:	

position: E: 289586; N: 6245762 (GDA2020 MGA) surface elevation: 74.44 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: Water hole diameter : 115 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description (ROCK TYPE: grain characterisics, colour, structure, minor components)	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral)	samples, field tests & Is(50) (MPa) (a = axial; d = diametral)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					sandstone, hard to tell from photo	FR					
		66			**INTERLAMINATED SANDSTONE (60%) AND SILTSTONE (40%)**: fine grained, pale grey, siltstone is dark grey, with occasional sandstone beds up to 30 mm, distinctly laminated.				69%		Drilling Break JT, 55°, PL, CA CO - healed
			9.0								
		65									Drilling Break Drilling Break
			10.0								JT, 60 - 85°, UN, CA CO, Tight
		64							96%		SM, Clay, 20 mm SM, Clay, 50 mm
			11.0		**SILTSTONE**: dark grey, with 5% sandstone laminations, trace sandstone nodules up to 3 mm in diameter, distinctly laminated.						
		63			**INTERLAMINATED SILTSTONE (60%) AND SANDSTONE (40%)**: dark grey, sandstone is fine grained and pale grey, with occasional siltstone beds up to 60 mm, distinctly laminated.						JT, 20°, CU, RO, CA CO, Tight
			12.0								JT, 85°, PL, RO, CA VN
		62									JT, 75°, PL, RO, CA CO, 1 mm JT, 0 - 85°, UN, CA CO, 1 mm
			13.0								Drilling Break Drilling Break Drilling Break JT, 0 - 85°, ST, RO, Clay VN
		61			13.20 m: increasing siltstone content				96%		
			14.0								Drilling Break JT, 60°, PL, RO, CA CO, 3 mm PT, 0°, PL, SO, Clay CO, 3 mm
		60			**SILTSTONE**: dark grey, trace fine to medium grained sandstone clasts and siltstone laminations.						
			15.0								Drilling Break
		59							91%		Drilling Break

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4022.GPJ <<DrawingFile>> 31/10/2022 12:28

TETRA TECH COFFEY

Engineering Log - Cored Borehole

DRAFT

client:	*CPB Ghella*	Borehole ID.	***SBT-GW-4022***
principal:	*Sydney Metro*	sheet:	4 of 4
project:	*WSA SBT*	project no.	***754-SYDGE292575***
location:	*40 Derwent Street, Bringelly*	date started:	***27 May 2022***
		date completed:	***31 May 2022***
		logged by:	***RF***
		checked by:	

position: E: 289586; N: 6245762 (GDA2020 MGA) surface elevation: 74.44 m (AHD) angle from horizontal: 90°

drill model: Hanjin DB8 drilling fluid: Water hole diameter : 115 mm

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ		58			**SILTSTONE**: dark grey, trace fine to medium grained sandstone clasts and siltstone laminations. *(continued)*	FR					SM, Clay, 90 mm
											Drilling Break PT, 5°, PL, SO, Clay VN Drilling Break
			17.0						91%		SM, Clay, 100 mm
		57			17.20 m: with siderite nodules up to 20 mm in diameter						
			18.0		Borehole SBT-GW-4022 terminated at 17.90 m						
		56									
			19.0								
		55									
			20.0								
		54									
			21.0								
		53									
			22.0								
		52									
			23.0								
		51									

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

CDF_0_10_00.4_LIBRARY.GLB rev:CDF_0_10_00.4 2021-09-30 Log COF BOREHOLE: CORED SBT-GW-4022.GPJ <<DrawingFile>> 31/10/2022 12:28

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4022**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 1**

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date			title:	CORE PHOTOGRAPH SBT-BH-4022
scale	N/A			
original	A4		project no: 754-SYDGE292575	Figure 2

drawn		TETRA TECH COFFEY	client:	**CPB Ghella**
approved			Project	**WSA SBT**
date			title:	**CORE PHOTOGRAPH SBT-BH-4022**
scale	**N/A**			
original	**A4**		project no: **754-SYDGE292575**	**Figure 3**

drawn		TETRA TECH COFFEY	client:	CPB Ghella
approved			Project	WSA SBT
date				
scale	N/A		title:	CORE PHOTOGRAPH SBT-BH-4022
original	A4		project no: 754-SYDGE292575	Figure 4

Annexure C Laboratory Reports

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2242062**	Page	: 1 of 14
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 3, TOWER 1 495 VICTORIA AVENUE CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: WSA SBT	Date Samples Received	: 21-Nov-2022 17:20
Order number	: ----	Date Analysis Commenced	: 22-Nov-2022
C-O-C number	: ----	Issue Date	: 28-Nov-2022 16:31
Sampler	: Jack Fanagan		
Site	: ----		
Quote number	: SY/247/22_V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- ED037-P : Alkalinity was determined on a centrifuged sample
-
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**11.0**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**810**	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**448**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	**56**	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	**80**	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**135**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**115**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**64**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**49**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	<1	----	----	----	----
Sodium	7440-23-5	1	mg/L	**66**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**64**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.46**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.001**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	**0.008**	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.007**	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**2.98**	<0.01	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.002**	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	**0.015**	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.022**	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.001**	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.004**	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	**0.006**	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.043**	<0.005	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.044**	<0.001	----	----	----
Iron	7439-89-6	0.05	mg/L	**2.16**	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.57**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.84**	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**3.30**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**4.14**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**2.0**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**6.1**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.13**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**6.90**	----	----	----	----
ø Total Cations	----	0.01	meq/L	**6.95**	----	----	----	----
ø Ionic Balance	----	0.01	%	**0.40**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**13**	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
Styrene	100-42-5	5	µg/L	<5	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	----	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	**140**	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	----	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	----	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
Chloroethane	75-00-3	50	µg/L	<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	----	----	----	----
Bromoform	75-25-2	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
2-Chloronaphthalene	91-58-7	2	µg/L	<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	----	----	----	----
Fluorene	86-73-7	2	µg/L	<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	----	----	----	----
Anthracene	120-12-7	2	µg/L	<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	----	----	----	----
Pyrene	129-00-0	2	µg/L	<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	----	----	----	----
Chrysene	218-01-9	2	µg/L	<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EP075D: Nitrosamines - Continued								
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	----	----	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	----	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	----	----	----	----
Isophorone	78-59-1	2	µg/L	<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	----	----	----	----
Azobenzene	103-33-3	2	µg/L	<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	----	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EP075G: Chlorinated Hydrocarbons - Continued								
Hexachlorobutadiene	87-68-3	2	µg/L	<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	----	----	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	----	----	----	----
Carbazole	86-74-8	2	µg/L	<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	----	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	----	----	----	----
Aldrin	309-00-2	2	µg/L	<2	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	----	----	----	----
Endrin	72-20-8	2	µg/L	<2	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EP075J: Organophosphorus Pesticides - Continued								
Dimethoate	60-51-5	2	µg/L	<2	----	----	----	----
Diazinon	333-41-5	2	µg/L	<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	----	----
Malathion	121-75-5	2	µg/L	<2	----	----	----	----
Fenthion	55-38-9	2	µg/L	<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	----	----	----	----
Ethion	563-12-2	2	µg/L	<2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ Total Xylenes	----	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EP080: BTEXN - Continued								
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.01**	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.01**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.01**	----	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**98.1**	----	----	----	----
Toluene-D8	2037-26-5	5	%	**101**	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	**99.1**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**19.6**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**66.6**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**70.0**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4005	RB.211122_JF	----	----	----
			Sampling date / time	21-Nov-2022 00:00	21-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2242062-001	ES2242062-002	--------	--------	--------
				Result	Result	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	81.8	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	87.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	88.5	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	33.3	----	----	----	----
Phenol-d6	13127-88-3	2	%	27.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	45.9	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	81.1	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	53.2	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	44.8	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	59.5	----	----	----	----
Anthracene-d10	1719-06-8	2	%	68.3	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	74.9	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	125	----	----	----	----
Toluene-D8	2037-26-5	2	%	100	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	101	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	102	----	----	----	----
13C8-PFOA	----	0.02	%	96.4	----	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2242062**	Page	: 1 of 20
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 3, TOWER 1 495 VICTORIA AVENUE CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: WSA SBT	Date Samples Received	: 21-Nov-2022
Order number	: ----	Date Analysis Commenced	: 22-Nov-2022
C-O-C number	: ----	Issue Date	: 28-Nov-2022
Sampler	: Jack Fanagan		
Site	: ----		
Quote number	: SY/247/22_V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4721272)									
ES2241857-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.18	7.19	0.1	0% - 20%
ES2242297-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.68	7.71	0.4	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4721274)									
ES2241997-003	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1040	1040	0.3	0% - 20%
ES2241997-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1310	1320	0.5	0% - 20%
ES2242074-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	467	460	1.5	0% - 20%
ES2242297-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	171	169	1.2	0% - 20%
ES2242342-005	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1230	1220	1.5	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4721107)									
ES2241782-005	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1450	1360	6.6	0% - 20%
ES2241894-005	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	32	28	10.9	No Limit
ED037P: Alkalinity by PC Titrator (QC Lot: 4721273)									
ES2241857-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	865	867	0.3	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	865	867	0.3	0% - 20%
ES2241997-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	113	113	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	113	113	0.0	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4720761)									
ES2242263-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	43	43	0.0	0% - 20%
ES2242062-001	SBT-GW-4005	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	115	115	0.0	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
ED045G: Chloride by Discrete Analyser (QC Lot: 4720762)									
ES2242263-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	134	136	1.5	0% - 20%
ES2242062-001	SBT-GW-4005	ED045G: Chloride	16887-00-6	1	mg/L	64	64	0.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4721298)									
ES2241995-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	65	65	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	40	41	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	22	22	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.0	No Limit
ES2241997-004	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	70	70	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	44	45	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	23	23	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4721296)									
ES2241995-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.043	0.042	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2241997-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.048	0.048	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4721262)									
ES2241994-004	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.009	0.008	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.714	0.732	2.5	0% - 20%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.172	0.180	4.5	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.325	0.337	3.4	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4721262) - continued									
ES2241994-004	Anonymous	EG020A-T: Lead	7439-92-1	0.001	mg/L	0.020	0.021	5.0	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	5.16	5.32	3.2	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.197	0.202	2.4	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.132	0.136	3.1	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	52.1	52.2	0.3	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	85.5	85.1	0.4	0% - 20%
ES2241994-033	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.005	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.185	0.185	0.0	0% - 20%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.017	0.017	0.0	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.060	0.059	1.9	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.597	0.605	1.4	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.045	0.044	2.6	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.040	0.038	4.1	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	12.0	11.4	5.5	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	38.5	37.5	2.4	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4721295)									
ES2241995-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2241997-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4721335)									
ES2242005-013	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4722174)									
ES2241948-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	26500 µg/L	25.8	2.6	0% - 20%
ES2242088-046	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4720763)									
ES2242201-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2242062-001	SBT-GW-4005	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.84	0.83	0.0	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4722175)									
ES2241948-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	380 µg/L	0.38	0.0	0% - 20%
ES2242088-046	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4722178)									
ES2241945-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	17.7	16.1	9.3	No Limit
ES2242088-044	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.1	<0.1	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4722179)									
ES2241945-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	1.59	1.62	1.8	0% - 20%
ES2242088-044	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.02	0.03	59.6	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4720764)									
ES2242201-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.56	0.55	0.0	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4720764) - continued									
ES2242062-001	SBT-GW-4005	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4716840)									
ES2241782-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	7	7	0.0	No Limit
ES2241960-002	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	1	5	114	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4724938)									
ES2242062-001	SBT-GW-4005	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4724938)									
ES2242062-001	SBT-GW-4005	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	140	120	11.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4724938)									
ES2242062-001	SBT-GW-4005	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4724938)									
ES2242062-001	SBT-GW-4005	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4724938)									
ES2242062-001	SBT-GW-4005	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4724938) - continued									
ES2242062-001	SBT-GW-4005	EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4724938)									
ES2242062-001	SBT-GW-4005	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4724938)									
ES2242062-001	SBT-GW-4005	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4724937)									
ES2242062-001	SBT-GW-4005	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4724937)									
ES2242062-001	SBT-GW-4005	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4724937)									
ES2242062-001	SBT-GW-4005	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 4724937) - continued									
ES2242062-001	SBT-GW-4005	EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4723180)									
ES2241615-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.06	0.06	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.31	0.26	16.5	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2242078-012	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4723180)									
ES2241615-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2242078-012	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4723180)									
ES2241615-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2242078-012	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4723180) - continued									
ES2242078-012	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4721272)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.8	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4721274)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	92.6	89.9	110
				<1	2100 µS/cm	98.8	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4721107)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	96.9	87.0	109
				<10	293 mg/L	103	75.2	126
				<10	2340 mg/L	98.4	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4721273)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	99.1	81.0	111
				----	50 mg/L	109	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4720761)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	104	82.0	122
				<1	500 mg/L	105	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4720762)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	100	80.9	127
				<1	1000 mg/L	98.7	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4721298)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	93.6	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	98.3	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	98.1	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	97.0	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4721296)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	84.6	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	90.3	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.4	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	87.5	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	87.2	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	87.9	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.9	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	85.5	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	86.0	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	86.9	81.0	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4721296) - continued								
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	85.6	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4721262)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.0	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.6	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.9	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.6	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	99.6	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.5	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	94.0	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	92.3	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	99.4	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.7	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	97.5	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4721295)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.9	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4721335)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.7	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4722174)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	101	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4720763)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	106	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4722175)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	107	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4722178)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	96.7	69.0	101
				<0.1	1 mg/L	91.8	70.0	118
				<0.1	5 mg/L	98.3	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4722179)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	103	71.3	126
				<0.01	0.442 mg/L	110	71.3	126
				<0.01	1 mg/L	114	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4720764)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	105	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4716840)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	97.2	72.0	120
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4724938)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.0	77.0	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4724938) - continued								
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.5	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	95.5	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	95.1	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	97.4	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	96.9	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	95.4	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	95.7	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	95.2	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	96.3	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	96.2	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	96.9	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	95.2	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	95.6	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4724938)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	99.2	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	88.7	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	98.0	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	88.9	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4724938)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	92.8	72.8	127
EP074D: Fumigants (QCLot: 4724938)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	95.9	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	95.3	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	94.4	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	97.0	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	98.3	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4724938)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	89.2	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	92.4	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	92.7	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	95.0	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	94.5	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	93.2	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	93.6	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	93.6	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	96.1	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	95.2	74.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4724938) - continued								
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	95.6	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	94.3	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	94.0	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	94.1	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	97.2	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	96.3	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	100	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	98.9	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	99.0	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	91.1	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	96.3	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	95.4	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	96.7	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	99.9	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	100	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	100	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	99.8	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4724938)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	97.3	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	95.6	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	96.1	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	95.8	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	97.5	67.0	123
EP074G: Trihalomethanes (QCLot: 4724938)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	97.2	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	94.4	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	97.5	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	95.5	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4718023)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	68.1	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	68.7	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	69.5	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	72.6	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	80.4	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	83.8	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	86.0	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	88.0	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	80.6	64.1	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4718023) - continued								
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	83.9	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	73.0	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	84.7	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	81.0	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	78.6	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	81.0	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	78.7	59.1	118
EP075A: Phenolic Compounds (QCLot: 4718025)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	36.8	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	66.9	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	58.4	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	56.6	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	88.7	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	# 39.4	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	79.6	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	79.6	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	76.6	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	84.8	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	79.1	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	84.5	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4718025)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	71.0	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	73.0	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	74.8	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	81.1	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	82.7	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	83.8	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	86.9	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	87.8	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	90.0	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	85.7	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	84.0	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	88.1	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	83.3	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	84.6	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	96.0	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	83.0	59.2	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4718025) - continued								
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	96.7	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	83.6	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	85.6	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	84.9	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4718025)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	88.1	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	93.1	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	95.6	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	92.0	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	97.2	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	89.6	62.1	115
EP075D: Nitrosamines (QCLot: 4718025)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	59.1	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	74.8	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	67.1	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	65.9	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	85.0	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	80.3	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	99.2	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	86.7	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	44.4	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4718025)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	46.6	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	80.6	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	77.9	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	88.0	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	86.5	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	89.1	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	# 115	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	90.9	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	84.8	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	86.3	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	89.8	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	75.0	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	72.2	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	88.1	59.0	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 4718025) - continued								
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	92.4	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	89.2	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	92.9	57.7	110
EP075F: Haloethers (QCLot: 4718025)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	76.0	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	83.9	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	84.3	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	85.2	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4718025)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	57.4	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	57.3	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	59.3	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	56.0	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	59.8	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	58.4	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	59.3	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	61.3	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	77.0	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	85.4	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4718025)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	69.3	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	75.9	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	84.6	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	80.6	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	83.5	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	76.8	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	88.1	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	84.4	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4718025)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	89.6	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	89.1	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	93.9	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	88.4	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	94.3	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	92.9	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	95.0	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	92.8	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	88.1	53.0	115

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075I: Organochlorine Pesticides (QCLot: 4718025) - continued								
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	87.6	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	93.5	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	86.9	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	90.4	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	91.5	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	91.2	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4718025)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	93.8	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	87.9	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	94.0	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	96.4	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	110	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	93.3	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	92.5	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	91.2	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	83.8	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	92.6	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	96.2	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4718024)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	70.7	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	99.7	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	77.3	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4724937)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	102	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4718024)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	80.4	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	90.5	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	76.0	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4724937)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	104	75.0	127
EP080: BTEXN (QCLot: 4724937)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	103	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	102	70.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP080: BTEXN (QCLot: 4724937) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	99.4	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	96.1	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4723180)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	90.6	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	103	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	97.0	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4723180)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	93.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	113	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	110	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4723180)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	103	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	105	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	114	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	88.4	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4720761)							
ES2242062-001	SBT-GW-4005	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4720762)							
ES2242062-001	SBT-GW-4005	ED045G: Chloride	16887-00-6	50 mg/L	112	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4721296)							
ES2241995-004	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	88.0	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	91.3	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	99.7	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	101	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	104	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4721296) - continued							
ES2241995-004	Anonymous	EG020A-F: Lead	7439-92-1	1 mg/L	121	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	90.7	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	87.8	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	92.8	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4721262)							
ES2241994-008	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.2	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	94.9	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	90.2	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	93.0	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	93.1	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	89.0	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	86.5	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	93.1	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.6	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4721295)							
ES2241995-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	93.2	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4721335)							
ES2242062-001	SBT-GW-4005	EG035T: Mercury	7439-97-6	0.01 mg/L	90.1	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4722174)							
ES2241948-002	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4720763)							
ES2242062-001	SBT-GW-4005	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	106	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4722175)							
ES2241948-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	101	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4722178)							
ES2241948-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	# Not Determined	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4722179)							
ES2241948-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	# Not Determined	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4720764)							
ES2242062-001	SBT-GW-4005	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	97.5	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4716840)							
ES2241782-002	Anonymous	EP005: Total Organic Carbon	----	125 mg/L	105	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4724938)							
ES2242062-001	SBT-GW-4005	EP074: Benzene	71-43-2	25 µg/L	111	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	114	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4724938)							
ES2242062-001	SBT-GW-4005	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	104	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	112	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4724938)							
ES2242062-001	SBT-GW-4005	EP074: Chlorobenzene	108-90-7	25 µg/L	130	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4724937)							
ES2242062-001	SBT-GW-4005	EP080: C6 - C9 Fraction	----	325 µg/L	121	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4724937)							
ES2242062-001	SBT-GW-4005	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	122	70.0	130
EP080: BTEXN (QCLot: 4724937)							
ES2242062-001	SBT-GW-4005	EP080: Benzene	71-43-2	25 µg/L	120	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	116	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	119	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	119	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	118	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	111	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4723180)							
ES2241615-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	106	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	# Not Determined	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	# Not Determined	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4723180)							
ES2241615-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	111	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	117	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	# Not Determined	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	125	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	107	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4723180)							
ES2241615-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	110	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	117	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	# Not Determined	67.0	138

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4723180) - continued							
ES2241615-002	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	93.6	71.4	144

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2242062**	Page	: 1 of 12
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: WSA SBT	Date Samples Received	: 21-Nov-2022
Site	: ----	Issue Date	: 28-Nov-2022
Sampler	: Jack Fanagan	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075A: Phenolic Compounds	QC-4718025-002	----	**2.4-Dimethylphenol**	105-67-9	39.4 %	50.0-94.0%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4718025-002	----	**1-Naphthylamine**	134-32-7	115 %	46.8-102%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2242062--001	SBT-GW-4005	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK055G: Ammonia as N by Discrete Analyser	ES2241948--002	Anonymous	**Ammonia as N**	7664-41-7	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	ES2241948--002	Anonymous	**Total Kjeldahl Nitrogen as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK067G: Total Phosphorus as P by Discrete Analyser	ES2241948--002	Anonymous	**Total Phosphorus as P**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	ES2241615--002	Anonymous	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	ES2241615--002	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	ES2241615--002	Anonymous	**Perfluorohexanoic acid (PFHxA)**	307-24-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	ES2241615--002	Anonymous	**8:2 Fluorotelomer sulfonic acid (8:2 FTS)**	39108-34-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural						
SBT-GW-4005	----	----	----	23-Nov-2022	21-Nov-2022	**2**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) SBT-GW-4005	**21-Nov-2022**	**----**	----	----	**23-Nov-2022**	21-Nov-2022	×
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P) SBT-GW-4005	**21-Nov-2022**	**----**	----	----	**23-Nov-2022**	19-Dec-2022	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) SBT-GW-4005	**21-Nov-2022**	**----**	----	----	**23-Nov-2022**	28-Nov-2022	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) SBT-GW-4005	**21-Nov-2022**	**----**	----	----	**23-Nov-2022**	05-Dec-2022	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) SBT-GW-4005	**21-Nov-2022**	**----**	----	----	**23-Nov-2022**	19-Dec-2022	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) SBT-GW-4005	**21-Nov-2022**	**----**	----	----	**23-Nov-2022**	19-Dec-2022	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) SBT-GW-4005	**21-Nov-2022**	**----**	----	----	**23-Nov-2022**	19-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
SBT-GW-4005	21-Nov-2022	----	----	----	23-Nov-2022	20-May-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
SBT-GW-4005, RB.211122_JF	21-Nov-2022	23-Nov-2022	20-May-2023	✓	23-Nov-2022	20-May-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
SBT-GW-4005	21-Nov-2022	----	----	----	24-Nov-2022	19-Dec-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
SBT-GW-4005, RB.211122_JF	21-Nov-2022	----	----	----	24-Nov-2022	19-Dec-2022	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
SBT-GW-4005	21-Nov-2022	----	----	----	23-Nov-2022	19-Dec-2022	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
SBT-GW-4005	21-Nov-2022	----	----	----	23-Nov-2022	23-Nov-2022	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
SBT-GW-4005	21-Nov-2022	----	----	----	23-Nov-2022	19-Dec-2022	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
SBT-GW-4005	21-Nov-2022	23-Nov-2022	19-Dec-2022	✓	23-Nov-2022	19-Dec-2022	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
SBT-GW-4005	21-Nov-2022	23-Nov-2022	19-Dec-2022	✓	23-Nov-2022	19-Dec-2022	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
SBT-GW-4005	21-Nov-2022	----	----	----	23-Nov-2022	23-Nov-2022	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005)							
SBT-GW-4005	21-Nov-2022	----	----	----	22-Nov-2022	19-Dec-2022	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-GW-4005	21-Nov-2022	25-Nov-2022	05-Dec-2022	✓	25-Nov-2022	05-Dec-2022	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-GW-4005	21-Nov-2022	25-Nov-2022	05-Dec-2022	✓	25-Nov-2022	05-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-GW-4005	**21-Nov-2022**	**25-Nov-2022**	05-Dec-2022	✓	**25-Nov-2022**	05-Dec-2022	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-GW-4005	**21-Nov-2022**	**25-Nov-2022**	05-Dec-2022	✓	**25-Nov-2022**	05-Dec-2022	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-GW-4005	**21-Nov-2022**	**25-Nov-2022**	05-Dec-2022	✓	**25-Nov-2022**	05-Dec-2022	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-GW-4005	**21-Nov-2022**	**25-Nov-2022**	05-Dec-2022	✓	**25-Nov-2022**	05-Dec-2022	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-GW-4005	**21-Nov-2022**	**25-Nov-2022**	05-Dec-2022	✓	**25-Nov-2022**	05-Dec-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**23-Nov-2022**	01-Jan-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**25-Nov-2022**	01-Jan-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**23-Nov-2022**	01-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SBT-GW-4005	**21-Nov-2022**	**25-Nov-2022**	05-Dec-2022	✓	**25-Nov-2022**	05-Dec-2022	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
SBT-GW-4005	**21-Nov-2022**	**22-Nov-2022**	28-Nov-2022	✓	**23-Nov-2022**	01-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SBT-GW-4005	**21-Nov-2022**	**25-Nov-2022**	05-Dec-2022	✓	**25-Nov-2022**	05-Dec-2022	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
SBT-GW-4005	**21-Nov-2022**	**25-Nov-2022**	05-Dec-2022	✓	**25-Nov-2022**	05-Dec-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
SBT-GW-4005	**21-Nov-2022**	**24-Nov-2022**	20-May-2023	✓	**25-Nov-2022**	20-May-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
SBT-GW-4005	**21-Nov-2022**	**24-Nov-2022**	20-May-2023	✓	**25-Nov-2022**	20-May-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
SBT-GW-4005	**21-Nov-2022**	**24-Nov-2022**	20-May-2023	✓	**25-Nov-2022**	20-May-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
SBT-GW-4005	**21-Nov-2022**	**24-Nov-2022**	20-May-2023	✓	**25-Nov-2022**	20-May-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	5	47	10.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	2	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	10	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	47	8.51	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	47	**2.13**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens ~~Mobile:~~ email: emma.stephens@tetratech.com Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com Phone: casey.nfarrel@tetratech.com Email: esdat_labreports@coffey.com

Project No: Task No:

Project Name: WSA SBT Laboratory: ALS

Sampler's Name: Jack Fanagan Project Manager: Emma Stephens

Quote number (if different to current quoted prices): SY/247/22 V2

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline monitoring extended suite	Baseline monitoring extended suite rinsate											NOTES
1	SBT-GW-4005	21/11/22		W	Bottles	STD	X												
2	RB-211122_JF	"		W	"	"		X											

HT

Environmental Division
Sydney
Work Order Reference
ES2242062

Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name:	Date:	Name: JC	Date: 21/11/21
Coffey	Time:	Company: AU	Time: 1770
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2242287**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 22-Nov-2022 17:20
Order number	: ----	Date Analysis Commenced	: 22-Nov-2022
C-O-C number	: ----	Issue Date	: 29-Nov-2022 17:52
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EG050G: Poor spike recovery for Heexavalent Chromium due to matrix interferences(confirmed by dilution)
- EK055G: LOR raised for Ammonia due to sample matrix #1 and #3
- It has been noted that Nitrite is greater than NOx, however this difference is within the limits of experimental variation #2
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	5.27	7.44	5.60	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	9390	23900	9440	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	6220	16600	6230	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	1120	8	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	1120	8	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	205	906	201	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	3330	7900	3280	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	1	184	1	----	----
Magnesium	7439-95-4	1	mg/L	169	821	170	----	----
Sodium	7440-23-5	1	mg/L	1560	3800	1570	----	----
Potassium	7440-09-7	1	mg/L	3	22	3	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.83	<0.01	1.85	----	----
Arsenic	7440-38-2	0.001	mg/L	0.001	0.002	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	0.109	0.006	0.111	----	----
Copper	7440-50-8	0.001	mg/L	0.013	<0.001	0.013	----	----
Lead	7439-92-1	0.001	mg/L	0.007	<0.001	0.006	----	----
Manganese	7439-96-5	0.001	mg/L	0.023	0.174	0.023	----	----
Nickel	7440-02-0	0.001	mg/L	0.039	0.007	0.039	----	----
Zinc	7440-66-6	0.005	mg/L	0.152	0.008	0.145	----	----
Iron	7439-89-6	0.05	mg/L	0.11	<0.05	0.11	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	2.03	0.52	2.77	----	----
Arsenic	7440-38-2	0.001	mg/L	----	----	----	<0.001	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	----	----	----	<0.001	----
Copper	7440-50-8	0.001	mg/L	----	----	----	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	**0.104**	**0.007**	**0.110**	----	----
Nickel	7440-02-0	0.001	mg/L	----	----	----	<0.001	----
Lead	7439-92-1	0.001	mg/L	----	----	----	<0.001	----
Zinc	7440-66-6	0.005	mg/L	----	----	----	<0.005	----
Manganese	7439-96-5	0.001	mg/L	**0.020**	**0.184**	**0.038**	----	----
Iron	7439-89-6	0.05	mg/L	**0.33**	**1.49**	**1.27**	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	----	<0.0001	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	<0.10	**0.45**	<0.10	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	**0.25**	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.09**	<0.01	**0.84**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.09**	**0.21**	**0.84**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.2**	**2.1**	**0.8**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.3**	**2.3**	**1.6**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.04**	**0.34**	**0.32**	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**98.3**	**264**	**96.9**	----	----
ø Total Cations	----	0.01	meq/L	**81.9**	**243**	**82.4**	----	----
ø Ionic Balance	----	0.01	%	**9.10**	**4.24**	**8.06**	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**12**	**5**	**11**	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	<5	<5	<5	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	<5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	----	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	----	----
Fluorene	86-73-7	2	µg/L	<2	<2	<2	----	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	<2	<2	<2	----	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	----	----
Pyrene	129-00-0	2	µg/L	<2	<2	<2	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	----	----
Chrysene	218-01-9	2	µg/L	<2	<2	<2	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	----	----
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	----	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	----	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	----	----
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	----	----
Isophorone	78-59-1	2	µg/L	<2	<2	<2	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	----	----
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	----	----
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	----	----
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	----	----
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	<2	<2	<2	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	----	----
Carbazole	86-74-8	2	µg/L	<2	<2	<2	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	----	----
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	----	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	----	----
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	----	----
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	----	----
Aldrin	309-00-2	2	µg/L	<2	<2	<2	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	----	----
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	----	----
Endrin	72-20-8	2	µg/L	<2	<2	<2	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	----	----
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	----	----
Diazinon	333-41-5	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	----	----
Malathion	121-75-5	2	µg/L	<2	<2	<2	----	----
Fenthion	55-38-9	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	----	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	----	----
Ethion	563-12-2	2	µg/L	<2	<2	<2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	73.4	70.6	72.9	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	70.6	65.6	72.6	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	78.2	99.4	95.1	----	----
Toluene-D8	2037-26-5	5	%	90.2	112	109	----	----
4-Bromofluorobenzene	460-00-4	5	%	83.7	106	105	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	28.6	30.1	30.0	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	59.4	58.9	58.8	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	71.9	68.4	78.7	----	----
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1002	SBT_GW_4003	QC1_221122_JF	RB_221122_JF	----
			Sampling date / time	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	22-Nov-2022 00:00	----
Compound	CAS Number	LOR	Unit	ES2242287-001	ES2242287-002	ES2242287-003	ES2242287-004	--------
				Result	Result	Result	Result	----
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	77.5	72.2	76.7	----	----
Anthracene-d10	1719-06-8	1.0	%	86.2	84.3	93.6	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	89.2	85.6	95.8	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	38.7	42.1	40.6	----	----
Phenol-d6	13127-88-3	2	%	28.9	30.5	28.5	----	----
2-Chlorophenol-D4	93951-73-6	2	%	58.2	58.0	55.2	----	----
2.4.6-Tribromophenol	118-79-6	2	%	55.7	54.6	60.4	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	70.9	67.5	67.3	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	60.1	58.7	57.5	----	----
2-Fluorobiphenyl	321-60-8	2	%	70.1	63.4	64.6	----	----
Anthracene-d10	1719-06-8	2	%	78.3	80.6	85.2	----	----
4-Terphenyl-d14	1718-51-0	2	%	89.2	85.9	93.7	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	79.4	128	122	122	----
Toluene-D8	2037-26-5	2	%	89.3	111	108	109	----
4-Bromofluorobenzene	460-00-4	2	%	90.6	110	109	107	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	96.9	101	99.7	105	----
13C8-PFOA	----	0.02	%	91.0	98.1	92.7	103	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2242287**	Page	: 1 of 22
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 22-Nov-2022
Order number	: ----	Date Analysis Commenced	: 22-Nov-2022
C-O-C number	: ----	Issue Date	: 29-Nov-2022
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4719294)									
ES2242255-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.45	6.46	0.2	0% - 20%
ES2242210-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.14	6.17	0.5	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4719292)									
ES2242255-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	14	14	0.0	0% - 50%
ES2242210-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	64	62	2.8	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4722622)									
ES2242167-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	104	106	1.9	0% - 50%
ES2242304-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	202	199	1.5	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4719291)									
ES2242210-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	5	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	5	5	0.0	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4719357)									
ES2242245-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2240	2220	0.7	0% - 20%
ES2242304-012	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	9	9	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 4719358)									
ES2242245-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	14800	14800	0.2	0% - 20%
ES2242304-012	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	32	32	0.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4722113)									
ES2242318-006	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED093F: Dissolved Major Cations (QC Lot: 4722113) - continued									
ES2242318-006	Anonymous	ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit
ES2242287-002	SBT_GW_4003	ED093F: Calcium	7440-70-2	1	mg/L	184	173	6.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	821	792	3.6	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	3800	3640	4.4	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	22	22	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4722111)									
ES2242318-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2242287-002	SBT_GW_4003	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.174	0.166	5.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.007	0.008	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4722095)									
ES2242304-008	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4722095) - continued									
ES2242249-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.010	0.010	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4722112)									
ES2242287-001	SBT_GW_1002	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2242318-005	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4722083)									
ES2242287-004	RB_221122_JF	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4724083)									
ES2241981-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.10	<0.10	0.0	No Limit
WN2214699-002	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4723577)									
ES2242230-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	1.86	1.83	2.1	0% - 20%
ES2242318-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	47.4	47.7	0.7	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4719356)									
ES2242245-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.03	0.03	0.0	No Limit
ES2242304-012	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4723578)									
ES2242230-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	18.8	18.6	1.0	0% - 20%
ES2242318-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.05	0.05	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4723574)									
ES2242208-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	17400	16700	4.0	0% - 20%
ES2242306-011	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	4.9	5.1	3.6	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4723573)									
ES2242208-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	<10.0	10.4	3.9	No Limit
ES2242306-011	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.02	<0.02	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4719360)									
ES2242249-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EW2205435-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4720207)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP005: Total Organic Carbon (TOC) (QC Lot: 4720207) - continued									
ES2242263-014	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	10	11	0.0	0% - 50%
ES2242287-001	SBT_GW_1002	EP005: Total Organic Carbon	----	1	mg/L	12	12	0.0	0% - 50%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4727780)									
ES2242318-003	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2242277-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4727780)									
ES2242318-003	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2242277-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074B: Oxygenated Compounds (QC Lot: 4727780) - continued									
ES2242277-001	Anonymous	EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4727780)									
ES2242318-003	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2242277-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4727780)									
ES2242318-003	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2242277-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4727780)									
ES2242318-003	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4727780) - continued									
ES2242318-003	Anonymous	EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2242277-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4727780)									
ES2242318-003	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2242277-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074F: Halogenated Aromatic Compounds (QC Lot: 4727780) - continued									
ES2242277-001	Anonymous	EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4727780)									
ES2242318-003	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2242277-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4727781)									
ES2242277-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4727781)									
ES2242277-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4727781)									
ES2242277-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4723192)									
ES2242128-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.06	0.07	30.1	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.03	0.06	57.9	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2242278-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.06	0.06	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4723192)									
ES2242128-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2242278-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.13	0.12	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4723192) - continued									
ES2242278-001	Anonymous	EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4723192)									
ES2242128-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2242278-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4720530)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	62.7	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	82.4	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	84.0	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4720530)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	67.6	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	76.9	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	84.7	61.5	121
EA005P: pH by PC Titrator (QCLot: 4719294)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4719292)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	92.1	89.9	110
				<1	2100 µS/cm	97.5	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4722622)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	97.4	87.0	109
				<10	293 mg/L	99.8	75.2	126
				<10	2340 mg/L	98.6	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4719291)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	89.8	81.0	111
				----	50 mg/L	107	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4719357)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	106	82.0	122
				<1	500 mg/L	108	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4719358)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	103	80.9	127
				<1	1000 mg/L	100	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4722113)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	95.7	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	95.4	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	94.6	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	94.4	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4722111)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	90.9	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4722111) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.6	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.6	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	89.8	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	94.1	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.3	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.8	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.1	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.1	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.6	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	91.6	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4722095)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	90.1	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	93.4	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.0	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.6	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	91.7	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.0	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	93.7	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.7	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.7	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.8	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	93.8	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4722112)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	98.1	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4722083)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.4	77.0	111
EG050F: Dissolved Hexavalent Chromium (QCLot: 4724083)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	94.1	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4723577)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4719356)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	108	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4723578)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4723574)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	91.9	69.0	101
				<0.1	1 mg/L	87.5	70.0	118
				<0.1	5 mg/L	94.4	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4723573)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	105	71.3	126
				<0.01	0.442 mg/L	104	71.3	126
				<0.01	1 mg/L	110	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4719360)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	108	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4720207)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	101	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4720531)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	85.8	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	99.7	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	85.8	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	84.2	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	88.4	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	93.3	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	87.4	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	97.0	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	97.1	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	101	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	101	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	94.1	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	97.6	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	90.5	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	96.8	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	97.9	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	76.3	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	95.5	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	95.7	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	86.6	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	99.7	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4720531)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	83.7	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	89.6	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.8	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	98.9	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	89.6	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	99.2	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	83.6	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	91.7	68.4	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4720531) - continued								
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	92.3	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	95.7	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	82.1	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	98.9	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	108	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	99.5	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	86.2	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	100	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	93.1	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	92.1	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	87.3	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4720530)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4720530)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4727780)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	94.8	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	95.2	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	94.9	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	95.3	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	96.8	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	96.1	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	95.2	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	95.9	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	96.2	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	96.0	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	96.0	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	96.7	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	94.3	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	93.8	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4727780)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	98.9	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	94.2	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	103	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	97.7	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4727780)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	85.3	72.8	127

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074D: Fumigants (QCLot: 4727780)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	92.6	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	98.7	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	96.4	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	97.9	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	99.7	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4727780)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	105	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	101	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	94.5	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	98.4	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	93.3	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	85.3	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	88.6	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	100	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	90.8	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	95.2	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	95.2	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	93.4	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	92.4	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	92.7	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	99.8	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	94.6	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	101	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	100	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	100	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	92.3	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	96.4	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	100	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	103	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	105	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	101	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	100	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	98.8	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4727780)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	96.8	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	99.9	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	97.2	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	97.0	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	99.0	67.0	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074G: Trihalomethanes (QCLot: 4727780)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	99.0	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	96.6	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	96.8	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	98.7	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4720528)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	75.7	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	80.8	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	79.5	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	84.3	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	88.3	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	83.7	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	92.8	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	93.8	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	89.1	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	91.5	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	92.1	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	86.4	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	86.5	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	88.3	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	89.5	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	86.5	59.1	118
EP075A: Phenolic Compounds (QCLot: 4720527)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	33.5	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	57.9	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	55.5	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	51.1	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	76.8	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	53.6	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	66.3	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	66.5	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	69.3	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	74.5	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	72.0	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	70.6	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4720527)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	66.1	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	69.6	59.0	108

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4720527) - continued								
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	70.1	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	73.8	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	77.9	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	82.4	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	91.5	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	93.2	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	95.7	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	91.7	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	79.9	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	95.1	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	91.9	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	91.4	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	101	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	90.4	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	109	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	94.4	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	94.5	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	92.8	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4720527)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	80.4	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	87.9	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	99.4	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	101	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	108	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	100	62.1	115
EP075D: Nitrosamines (QCLot: 4720527)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	51.0	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	61.3	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	54.8	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	54.2	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	68.5	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	66.2	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	79.5	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	84.4	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	49.0	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4720527)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 4720527) - continued								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	# 34.2	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	70.4	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	72.4	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	70.9	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	79.4	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	83.2	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	# 118	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	91.0	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	81.3	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	84.8	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	84.0	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	68.4	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	77.2	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	92.5	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	87.8	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	94.2	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	97.7	57.7	110
EP075F: Haloethers (QCLot: 4720527)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	# 62.1	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	69.6	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	86.6	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	88.8	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4720527)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	61.7	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	62.4	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	62.8	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	62.4	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	62.9	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	69.7	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	67.7	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	73.5	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	80.3	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	92.5	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4720527)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	57.6	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	62.8	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	78.5	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	77.0	51.5	96.9

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075H: Anilines and Benzidines (QCLot: 4720527) - continued								
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	79.9	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	73.4	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	86.8	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	83.6	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4720527)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	88.2	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	89.8	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	91.2	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	92.2	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	102	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	96.5	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	100.0	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	98.2	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	97.0	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	99.7	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	104	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	97.6	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	99.1	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	94.5	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	102	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4720527)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	78.9	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	84.7	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	94.8	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	104	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	112	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	101	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	103	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	99.4	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	88.1	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	103	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	106	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4720529)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	67.8	53.7	97.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4720529) - continued								
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	90.6	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	112	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4727781)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	93.6	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4720529)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	73.8	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	88.1	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	76.6	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4727781)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	95.1	75.0	127
EP080: BTEXN (QCLot: 4727781)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	102	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.3	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	97.8	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	97.1	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	94.8	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4723192)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	77.8	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	83.6	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	80.2	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4723192)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	79.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	93.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	87.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	85.4	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4723192)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	81.0	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	87.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	88.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	81.4	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4719357)							
ES2242245-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4719358)							
ES2242245-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4722111)							
ES2241912-006	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	99.0	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	91.9	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	81.2	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	92.9	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	89.9	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	87.3	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	82.0	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	91.6	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	85.3	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4722095)							
ES2242244-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	92.3	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	93.0	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	92.2	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	91.5	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	91.9	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	92.0	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.0	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.4	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	92.7	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4722112)							
ES2241912-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	95.4	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4722083)							
ES2242443-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	93.3	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4724083)							
ES2241981-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	# Not Determined	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4723577)							
ES2242230-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	94.3	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4719356)							
ES2242245-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	111	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4723578)							
ES2242230-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4723574)							
ES2242209-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	50 mg/L	90.2	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4723573)							
ES2242209-001	Anonymous	EK067G: Total Phosphorus as P	----	10 mg/L	108	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4719360)							
ES2242249-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4720207)							
ES2242263-017	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	99.6	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4727780)							
ES2242277-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	98.0	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	98.0	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4727780)							
ES2242277-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	86.3	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	95.7	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4727780)							
ES2242277-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	108	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4727781)							
ES2242277-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	101	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4727781)							
ES2242277-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	101	70.0	130
EP080: BTEXN (QCLot: 4727781)							
ES2242277-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	104	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	99.6	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	104	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	103	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	102	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	102	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4723192)							
ES2242128-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	76.4	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	80.0	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	79.8	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4723192)							

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4723192) - continued							
ES2242128-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	79.5	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	89.4	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	89.8	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	84.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	80.6	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4723192)							
ES2242128-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	80.2	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	83.8	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	84.6	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	74.2	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2242287**	Page	: 1 of 15
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 22-Nov-2022
Site	: ----	Issue Date	: 29-Nov-2022
Sampler	: JACK FLANAGAN	No. of samples received	: 4
Order number	: ----	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075E: Nitroaromatics and Ketones	QC-4720527-002	----	**2-Picoline**	109-06-8	34.2 %	41.0-109%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4720527-002	----	**1-Naphthylamine**	134-32-7	118 %	46.8-102%	**Recovery greater than upper control limit**
EP075F: Haloethers	QC-4720527-002	----	**Bis(2-chloroethyl) ether**	111-44-4	62.1 %	69.1-112%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2242245--001	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2242245--001	Anonymous	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	ES2242230--001	Anonymous	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068T: Organophosphorus Pesticide Surrogate	ES2242287-002	SBT_GW_4003	**DEF**	78-48-8	65.6 %	66.5-111 %	**Recovery less than lower data quality objective**
EP074S: VOC Surrogates	ES2242287-001	SBT_GW_1002	**1.2-Dichloroethane-D4**	17060-07-0	78.2 %	78.3-133 %	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**22-Nov-2022**	22-Nov-2022	✓
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**22-Nov-2022**	20-Dec-2022	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**23-Nov-2022**	29-Nov-2022	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**22-Nov-2022**	06-Dec-2022	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**22-Nov-2022**	20-Dec-2022	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**22-Nov-2022**	20-Dec-2022	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**23-Nov-2022**	20-Dec-2022	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**23-Nov-2022**	21-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF, RB_221122_JF	**22-Nov-2022**	**23-Nov-2022**	21-May-2023	✓	**23-Nov-2022**	21-May-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**24-Nov-2022**	20-Dec-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) RB_221122_JF	**22-Nov-2022**	**----**	----	----	**24-Nov-2022**	20-Dec-2022	✓
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH (EG050G-F) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**24-Nov-2022**	20-Dec-2022	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**24-Nov-2022**	20-Dec-2022	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**22-Nov-2022**	24-Nov-2022	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**24-Nov-2022**	20-Dec-2022	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	20-Dec-2022	✓	**24-Nov-2022**	20-Dec-2022	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	20-Dec-2022	✓	**24-Nov-2022**	20-Dec-2022	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**22-Nov-2022**	24-Nov-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**----**	----	----	**23-Nov-2022**	20-Dec-2022	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**24-Nov-2022**	03-Jan-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**24-Nov-2022**	03-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**24-Nov-2022**	03-Jan-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1002, SBT_GW_4003, QC1_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1002, QC1_221122_JF	SBT_GW_4003,	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1002, QC1_221122_JF	SBT_GW_4003,	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1002, QC1_221122_JF	SBT_GW_4003,	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1002, QC1_221122_JF	SBT_GW_4003,	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1002, QC1_221122_JF	SBT_GW_4003,	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**25-Nov-2022**	03-Jan-2023	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT_GW_1002, QC1_221122_JF,	SBT_GW_4003, RB_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**24-Nov-2022**	03-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT_GW_1002, QC1_221122_JF,	SBT_GW_4003, RB_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT_GW_1002, QC1_221122_JF,	SBT_GW_4003, RB_221122_JF	**22-Nov-2022**	**24-Nov-2022**	29-Nov-2022	✓	**24-Nov-2022**	03-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT_GW_1002, QC1_221122_JF,	SBT_GW_4003, RB_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT_GW_1002, QC1_221122_JF,	SBT_GW_4003, RB_221122_JF	**22-Nov-2022**	**28-Nov-2022**	06-Dec-2022	✓	**28-Nov-2022**	06-Dec-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT_GW_1002, QC1_221122_JF,	SBT_GW_4003, RB_221122_JF	**22-Nov-2022**	**24-Nov-2022**	21-May-2023	✓	**25-Nov-2022**	21-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT_GW_1002, QC1_221122_JF,	SBT_GW_4003, RB_221122_JF	**22-Nov-2022**	**24-Nov-2022**	21-May-2023	✓	**25-Nov-2022**	21-May-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT_GW_1002, QC1_221122_JF,	SBT_GW_4003, RB_221122_JF	**22-Nov-2022**	**24-Nov-2022**	21-May-2023	✓	**25-Nov-2022**	21-May-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT_GW_1002, QC1_221122_JF,	SBT_GW_4003, RB_221122_JF	**22-Nov-2022**	**24-Nov-2022**	21-May-2023	✓	**25-Nov-2022**	21-May-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	10	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	8	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	13	15.38	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Major Cations - Dissolved	ED093F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	16	**18.75**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	13	**7.69**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens

Invoices to: general.admin@tetratech.com

email

~~Mobile~~: emma.stephens@tetratech.com Email: jack.flanagan@tetratech.com

Phone: caguafarrel@tetratech.com Email: esdat_labreports@coffey.com

Project No: 292575-1

Task No:

Project Name: WSA SBT

Laboratory: ALS

Sampler's Name: Jack Fanagan

Project Manager: EMMA STEPHENS

Quote number (if different to current quoted prices): 54 | 373 | 22 V2

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring Extended Suite	Baseline Monitoring Rinsate	NOTES
1	SBT-GW-1002	22/11/22		Water	Bottles	STD	X		
2	SBT-GW-4003						X		
3	QC1_221122_JF						X		
4	QC2_221122_JF						X		Send to Eurofins
	RB_221122_JF							X	

HT

Environmental Division
Sydney
Work Order Reference
ES2242287

Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jack.F	Date: 22/11/22	Name: JG	Date: 22/11/21
Coffey	Time: 2:00	Company: AU	Time: 1720
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2242459**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 23-Nov-2022 16:35
Order number	: ----	Date Analysis Commenced	: 23-Nov-2022
C-O-C number	: ----	Issue Date	: 30-Nov-2022 17:14
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG050G: Poor spike recovery for Heexavalent Chromium due to matrix interferences(confirmed by dilution)
- EG020: It has been confirmed by re-digestion and re-analysis that dissolved concentration of some elements is higher than total concentration for sample ES2242459-004. For all other elements where filtered results are greater than total results, the difference is within experimental variation of the methods.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	----	4.97	6.18	6.04	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	12400	11500	21500	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	----	8220	7410	16400	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	1	48	42	----
Total Alkalinity as CaCO3	----	1	mg/L	----	1	48	42	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	194	518	462	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	4000	3720	7540	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	3	20	24	----
Magnesium	7439-95-4	1	mg/L	----	205	210	871	----
Sodium	7440-23-5	1	mg/L	----	2160	2040	4330	----
Potassium	7440-09-7	1	mg/L	----	3	2	3	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	1.58	0.01	0.09	----
Arsenic	7440-38-2	0.001	mg/L	----	<0.001	0.001	0.002	----
Cadmium	7440-43-9	0.0001	mg/L	----	0.0002	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	----	<0.001	<0.001	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	----	0.132	0.109	0.366	----
Copper	7440-50-8	0.001	mg/L	----	0.011	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L	----	0.004	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L	----	0.125	3.76	1.52	----
Nickel	7440-02-0	0.001	mg/L	----	0.062	0.023	0.107	----
Zinc	7440-66-6	0.005	mg/L	----	0.147	0.038	0.031	----
Iron	7439-89-6	0.05	mg/L	----	1.34	5.73	30.9	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	23.4	1.79	0.50	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	----	**0.150**	**0.114**	**0.324**	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	----	**0.291**	**3.72**	**0.555**	----
Iron	7439-89-6	0.05	mg/L	----	**62.3**	**9.09**	**29.6**	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	<0.0001	<0.0001	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	----	<0.01	<0.01	<0.01	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	----	<0.01	<0.01	<0.01	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	----	**0.16**	**0.09**	**0.12**	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	----	**0.02**	<0.01	<0.01	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	----	**158**	<0.01	<0.01	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	----	**158**	<0.01	<0.01	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	**22.5**	**1.6**	**2.1**	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	**180**	**1.6**	**2.1**	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	**0.40**	**0.05**	**0.37**	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	117	117	223	----
ø Total Cations	----	0.01	meq/L	----	111	107	261	----
ø Ionic Balance	----	0.01	%	----	2.56	4.30	7.88	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	----	12	15	3	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	<0.5	<0.5	<0.5	----
beta-BHC	319-85-7	0.5	µg/L	----	<0.5	<0.5	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
delta-BHC	319-86-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Heptachlor	76-44-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Aldrin	309-00-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	<0.5	<0.5	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Dieldrin	60-57-1	0.5	µg/L	----	<0.5	<0.5	<0.5	----
4.4`-DDE	72-55-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Endrin	72-20-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
4.4`-DDD	72-54-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
4.4`-DDT	50-29-3	2.0	µg/L	----	<2.0	<2.0	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L	----	<2.0	<2.0	<2.0	----
^ Total Chlordane (sum)	----	0.5	µg/L	----	<0.5	<0.5	<0.5	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	<0.5	<0.5	<0.5	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	----	<2.0	<2.0	<2.0	----
Dimethoate	60-51-5	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Diazinon	333-41-5	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L	----	<2.0	<2.0	<2.0	----
Malathion	121-75-5	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Fenthion	55-38-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Parathion	56-38-2	2.0	µg/L	----	<2.0	<2.0	<2.0	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Chlorfenvinphos	470-90-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Fenamiphos	22224-92-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Prothiofos	34643-46-4	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Ethion	563-12-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Carbophenothion	786-19-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Azinphos Methyl	86-50-0	0.5	µg/L	----	<0.5	<0.5	<0.5	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	----	<50	<50	<50	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	----	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	----	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	----	<50	<50	<50	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	----	<100	<100	<100	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	----	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	----	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	----	<100	<100	<100	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	----	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	----	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	----	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	<2	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	----	<5	<5	<5	----
ortho-Xylene	95-47-6	2	µg/L	----	<2	<2	<2	----
Isopropylbenzene	98-82-8	5	µg/L	----	<5	<5	<5	----
n-Propylbenzene	103-65-1	5	µg/L	----	<5	<5	<5	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	----	<5	<5	<5	----
sec-Butylbenzene	135-98-8	5	µg/L	----	<5	<5	<5	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	----	<5	<5	<5	----
tert-Butylbenzene	98-06-6	5	µg/L	----	<5	<5	<5	----
p-Isopropyltoluene	99-87-6	5	µg/L	----	<5	<5	<5	----
n-Butylbenzene	104-51-8	5	µg/L	----	<5	<5	<5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	----	<50	<50	<50	----
2-Butanone (MEK)	78-93-3	50	µg/L	----	<50	**70**	<50	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	----	<50	<50	<50	----
2-Hexanone (MBK)	591-78-6	50	µg/L	----	<50	<50	<50	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	<5	<5	<5	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	<5	<5	<5	----
1.2-Dichloropropane	78-87-5	5	µg/L	----	<5	<5	<5	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	<5	<5	<5	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	<5	<5	<5	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	<5	<5	<5	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	<50	<50	<50	----
Chloromethane	74-87-3	50	µg/L	----	<50	<50	<50	----
Vinyl chloride	75-01-4	50	µg/L	----	<50	<50	<50	----
Bromomethane	74-83-9	50	µg/L	----	<50	<50	<50	----
Chloroethane	75-00-3	50	µg/L	----	<50	<50	<50	----
Trichlorofluoromethane	75-69-4	50	µg/L	----	<50	<50	<50	----
1.1-Dichloroethene	75-35-4	5	µg/L	----	<5	<5	<5	----
Iodomethane	74-88-4	5	µg/L	----	<5	<5	<5	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	<5	<5	<5	----
1.1-Dichloroethane	75-34-3	5	µg/L	----	<5	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	<5	<5	<5	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	<5	<5	<5	----
1.1-Dichloropropylene	563-58-6	5	µg/L	----	<5	<5	<5	----
Carbon Tetrachloride	56-23-5	5	µg/L	----	<5	<5	<5	----
1.2-Dichloroethane	107-06-2	5	µg/L	----	<5	<5	<5	----
Trichloroethene	79-01-6	5	µg/L	----	<5	<5	<5	----
Dibromomethane	74-95-3	5	µg/L	----	<5	<5	<5	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	<5	<5	<5	----
1.3-Dichloropropane	142-28-9	5	µg/L	----	<5	<5	<5	----
Tetrachloroethene	127-18-4	5	µg/L	----	<5	<5	<5	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	<5	<5	<5	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	<5	<5	<5	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	<5	<5	<5	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	<5	<5	<5	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	<5	<5	<5	----
Pentachloroethane	76-01-7	5	µg/L	----	<5	<5	<5	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	----	<5	<5	<5	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	----	<5	<5	<5	----
Bromobenzene	108-86-1	5	µg/L	----	<5	<5	<5	----
2-Chlorotoluene	95-49-8	5	µg/L	----	<5	<5	<5	----
4-Chlorotoluene	106-43-4	5	µg/L	----	<5	<5	<5	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	----	<5	<5	<5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	----	<5	<5	<5	----
Bromodichloromethane	75-27-4	5	µg/L	----	<5	<5	<5	----
Dibromochloromethane	124-48-1	5	µg/L	----	<5	<5	<5	----
Bromoform	75-25-2	5	µg/L	----	<5	<5	<5	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Fluorene	86-73-7	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L	----	<1.0	<1.0	<1.0	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Pyrene	129-00-0	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	<1.0	<1.0	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	<0.5	<0.5	<0.5	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	<2	<2	<2	----
2-Chlorophenol	95-57-8	2	µg/L	----	<2	<2	<2	----
2-Methylphenol	95-48-7	2	µg/L	----	<2	<2	<2	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	<4	<4	<4	----
2-Nitrophenol	88-75-5	2	µg/L	----	<2	<2	<2	----
2.4-Dimethylphenol	105-67-9	2	µg/L	----	<2	<2	<2	----
2.4-Dichlorophenol	120-83-2	2	µg/L	----	<2	<2	<2	----
2.6-Dichlorophenol	87-65-0	2	µg/L	----	<2	<2	<2	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	<2	<2	<2	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	<2	<2	<2	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	<2	<2	<2	----
Pentachlorophenol	87-86-5	4	µg/L	----	<4	<4	<4	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	<2	<2	<2	----
2-Methylnaphthalene	91-57-6	2	µg/L	----	<2	<2	<2	----
2-Chloronaphthalene	91-58-7	2	µg/L	----	<2	<2	<2	----
Acenaphthylene	208-96-8	2	µg/L	----	<2	<2	<2	----
Acenaphthene	83-32-9	2	µg/L	----	<2	<2	<2	----
Fluorene	86-73-7	2	µg/L	----	<2	<2	<2	----
Phenanthrene	85-01-8	2	µg/L	----	<2	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	----	<2	<2	<2	----
Fluoranthene	206-44-0	2	µg/L	----	<2	<2	<2	----
Pyrene	129-00-0	2	µg/L	----	<2	<2	<2	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	<2	<2	<2	----
Benz(a)anthracene	56-55-3	2	µg/L	----	<2	<2	<2	----
Chrysene	218-01-9	2	µg/L	----	<2	<2	<2	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	<4	<4	<4	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	<2	<2	<2	----
Benzo(a)pyrene	50-32-8	2	µg/L	----	<2	<2	<2	----
3-Methylcholanthrene	56-49-5	2	µg/L	----	<2	<2	<2	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	<2	<2	<2	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	<2	<2	<2	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	<2	<2	<2	----
^ Sum of PAHs	----	2	µg/L	----	<2	<2	<2	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	<2	<2	<2	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	<2	<2	<2	----
Diethyl phthalate	84-66-2	2	µg/L	----	<2	<2	<2	----
Di-n-butyl phthalate	84-74-2	2	µg/L	----	<2	<2	<2	----
Butyl benzyl phthalate	85-68-7	2	µg/L	----	<2	<2	<2	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	<10	<10	<10	----
Di-n-octylphthalate	117-84-0	2	µg/L	----	<2	<2	<2	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	<2	<2	<2	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	<2	<2	<2	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	<4	<4	<4	----
N-Nitrosomorpholine	59-89-2	2	µg/L	----	<2	<2	<2	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	<2	<2	<2	----
N-Nitrosopiperidine	100-75-4	2	µg/L	----	<2	<2	<2	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	<2	<2	<2	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	<4	<4	<4	----
Methapyrilene	91-80-5	2	µg/L	----	<2	<2	<2	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	----	<2	<2	<2	----
Acetophenone	98-86-2	2	µg/L	----	<2	<2	<2	----
Nitrobenzene	98-95-3	2	µg/L	----	<2	<2	<2	----
Isophorone	78-59-1	2	µg/L	----	<2	<2	<2	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	<4	<4	<4	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	<4	<4	<4	----
1-Naphthylamine	134-32-7	2	µg/L	----	<2	<2	<2	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	<2	<2	<2	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	<2	<2	<2	----
Azobenzene	103-33-3	2	µg/L	----	<2	<2	<2	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	<2	<2	<2	----
Phenacetin	62-44-2	2	µg/L	----	<2	<2	<2	----
4-Aminobiphenyl	92-67-1	2	µg/L	----	<2	<2	<2	----
Pentachloronitrobenzene	82-68-8	2	µg/L	----	<2	<2	<2	----
Pronamide	23950-58-5	2	µg/L	----	<2	<2	<2	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	<2	<2	<2	----
Chlorobenzilate	510-15-6	2	µg/L	----	<2	<2	<2	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	<2	<2	<2	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	<2	<2	<2	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	<2	<2	<2	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	<2	<2	<2	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	<2	<2	<2	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	<2	<2	<2	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	<2	<2	<2	----
Hexachloroethane	67-72-1	2	µg/L	----	<2	<2	<2	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	<2	<2	<2	----
Hexachloropropylene	1888-71-7	2	µg/L	----	<2	<2	<2	----
Hexachlorobutadiene	87-68-3	2	µg/L	----	<2	<2	<2	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	<10	<10	<10	----
Pentachlorobenzene	608-93-5	2	µg/L	----	<2	<2	<2	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	<4	<4	<4	----
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	----	<2	<2	<2	----
4-Chloroaniline	106-47-8	2	µg/L	----	<2	<2	<2	----
2-Nitroaniline	88-74-4	4	µg/L	----	<4	<4	<4	----
3-Nitroaniline	99-09-2	4	µg/L	----	<4	<4	<4	----
Dibenzofuran	132-64-9	2	µg/L	----	<2	<2	<2	----
4-Nitroaniline	100-01-6	2	µg/L	----	<2	<2	<2	----
Carbazole	86-74-8	2	µg/L	----	<2	<2	<2	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	<2	<2	<2	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	----	<2	<2	<2	----
beta-BHC	319-85-7	2	µg/L	----	<2	<2	<2	----
gamma-BHC	58-89-9	2	µg/L	----	<2	<2	<2	----
delta-BHC	319-86-8	2	µg/L	----	<2	<2	<2	----
Heptachlor	76-44-8	2	µg/L	----	<2	<2	<2	----
Aldrin	309-00-2	2	µg/L	----	<2	<2	<2	----
Heptachlor epoxide	1024-57-3	2	µg/L	----	<2	<2	<2	----
alpha-Endosulfan	959-98-8	2	µg/L	----	<2	<2	<2	----
4.4`-DDE	72-55-9	2	µg/L	----	<2	<2	<2	----
Dieldrin	60-57-1	2	µg/L	----	<2	<2	<2	----
Endrin	72-20-8	2	µg/L	----	<2	<2	<2	----
beta-Endosulfan	33213-65-9	2	µg/L	----	<2	<2	<2	----
4.4`-DDD	72-54-8	2	µg/L	----	<2	<2	<2	----
Endosulfan sulfate	1031-07-8	2	µg/L	----	<2	<2	<2	----
4.4`-DDT	50-29-3	4	µg/L	----	<4	<4	<4	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	<4	<4	<4	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	<4	<4	<4	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	<2	<2	<2	----
Dimethoate	60-51-5	2	µg/L	----	<2	<2	<2	----
Diazinon	333-41-5	2	µg/L	----	<2	<2	<2	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	<2	<2	<2	----
Malathion	121-75-5	2	µg/L	----	<2	<2	<2	----
Fenthion	55-38-9	2	µg/L	----	<2	<2	<2	----
Chlorpyrifos	2921-88-2	2	µg/L	----	<2	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	----	<2	<2	<2	----
Chlorfenvinphos	470-90-6	2	µg/L	----	<2	<2	<2	----
Prothiofos	34643-46-4	2	µg/L	----	<2	<2	<2	----
Ethion	563-12-2	2	µg/L	----	<2	<2	<2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	----	105	83.2	67.6	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	----	87.1	81.7	64.1	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	----	118	123	125	----
Toluene-D8	2037-26-5	5	%	----	106	111	106	----
4-Bromofluorobenzene	460-00-4	5	%	----	110	116	112	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	----	Not Determined	31.4	24.3	----
2-Chlorophenol-D4	93951-73-6	1.0	%	----	19.8	62.6	44.2	----
2.4.6-Tribromophenol	118-79-6	1.0	%	----	20.8	69.1	57.2	----
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	----	83.9	96.5	52.4	----
Anthracene-d10	1719-06-8	1.0	%	----	93.1	91.1	73.5	----
4-Terphenyl-d14	1718-51-0	1.0	%	----	88.2	102	75.8	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	----	51.6	41.1	35.6	----
Phenol-d6	13127-88-3	2	%	----	39.2	34.2	29.7	----
2-Chlorophenol-D4	93951-73-6	2	%	----	60.8	64.2	55.0	----
2.4.6-Tribromophenol	118-79-6	2	%	----	44.4	65.3	53.2	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	----	64.0	79.1	66.7	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	----	57.8	60.5	52.9	----
2-Fluorobiphenyl	321-60-8	2	%	----	61.7	72.3	57.8	----
Anthracene-d10	1719-06-8	2	%	----	74.5	79.8	64.7	----
4-Terphenyl-d14	1718-51-0	2	%	----	75.1	81.0	64.4	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	112	117	123	125	----
Toluene-D8	2037-26-5	2	%	102	101	106	100	----
4-Bromofluorobenzene	460-00-4	2	%	106	107	111	109	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	102	96.0	102	104	----
13C8-PFOA	----	0.02	%	98.0	93.6	95.0	96.6	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

CERTIFICATE OF ANALYSIS

Work Order	: **ES2242459**	Page	: 1 of 16
Amendment	: **1**		
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 23-Nov-2022 16:35
Order number	: ----	Date Analysis Commenced	: 23-Nov-2022
C-O-C number	: ----	Issue Date	: 12-Dec-2022 17:36
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG050G: Poor spike recovery for Heexavalent Chromium due to matrix interferences(confirmed by dilution)
- EG020: It has been confirmed by re-digestion and re-analysis that dissolved concentration of some elements is higher than total concentration for sample ES2242459-004. For all other elements where filtered results are greater than total results, the difference is within experimental variation of the methods.
- Amendment (12/12/2022):This report has been amended to update sample 3 ID.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	----	4.97	6.18	6.04	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	12400	11500	21500	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	----	8220	7410	16400	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	1	48	42	----
Total Alkalinity as CaCO3	----	1	mg/L	----	1	48	42	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	194	518	462	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	4000	3720	7540	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	3	20	24	----
Magnesium	7439-95-4	1	mg/L	----	205	210	871	----
Sodium	7440-23-5	1	mg/L	----	2160	2040	4330	----
Potassium	7440-09-7	1	mg/L	----	3	2	3	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	1.58	0.01	0.09	----
Arsenic	7440-38-2	0.001	mg/L	----	<0.001	0.001	0.002	----
Cadmium	7440-43-9	0.0001	mg/L	----	0.0002	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	----	<0.001	<0.001	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	----	0.132	0.109	0.366	----
Copper	7440-50-8	0.001	mg/L	----	0.011	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L	----	0.004	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L	----	0.125	3.76	1.52	----
Nickel	7440-02-0	0.001	mg/L	----	0.062	0.023	0.107	----
Zinc	7440-66-6	0.005	mg/L	----	0.147	0.038	0.031	----
Iron	7439-89-6	0.05	mg/L	----	1.34	5.73	30.9	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	23.4	1.79	0.50	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	----	**0.150**	**0.114**	**0.324**	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	----	**0.291**	**3.72**	**0.555**	----
Iron	7439-89-6	0.05	mg/L	----	**62.3**	**9.09**	**29.6**	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	<0.0001	<0.0001	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	----	<0.01	<0.01	<0.01	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	----	<0.01	<0.01	<0.01	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	----	**0.16**	**0.09**	**0.12**	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	----	**0.02**	<0.01	<0.01	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	----	**158**	<0.01	<0.01	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	----	**158**	<0.01	<0.01	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	**22.5**	**1.6**	**2.1**	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	**180**	**1.6**	**2.1**	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	**0.40**	**0.05**	**0.37**	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	117	117	223	----
ø Total Cations	----	0.01	meq/L	----	111	107	261	----
ø Ionic Balance	----	0.01	%	----	2.56	4.30	7.88	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	----	12	15	3	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	<0.5	<0.5	<0.5	----
beta-BHC	319-85-7	0.5	µg/L	----	<0.5	<0.5	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
delta-BHC	319-86-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Heptachlor	76-44-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Aldrin	309-00-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	<0.5	<0.5	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Dieldrin	60-57-1	0.5	µg/L	----	<0.5	<0.5	<0.5	----
4.4`-DDE	72-55-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Endrin	72-20-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
4.4`-DDD	72-54-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
4.4`-DDT	50-29-3	2.0	µg/L	----	<2.0	<2.0	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L	----	<2.0	<2.0	<2.0	----
^ Total Chlordane (sum)	----	0.5	µg/L	----	<0.5	<0.5	<0.5	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	<0.5	<0.5	<0.5	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	----	<2.0	<2.0	<2.0	----
Dimethoate	60-51-5	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Diazinon	333-41-5	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L	----	<2.0	<2.0	<2.0	----
Malathion	121-75-5	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Fenthion	55-38-9	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Parathion	56-38-2	2.0	µg/L	----	<2.0	<2.0	<2.0	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Chlorfenvinphos	470-90-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Fenamiphos	22224-92-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Prothiofos	34643-46-4	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Ethion	563-12-2	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Carbophenothion	786-19-6	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Azinphos Methyl	86-50-0	0.5	µg/L	----	<0.5	<0.5	<0.5	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	----	<50	<50	<50	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	----	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	----	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	----	<50	<50	<50	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	----	<100	<100	<100	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	----	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	----	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	----	<100	<100	<100	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	----	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	----	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	----	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	<2	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	----	<5	<5	<5	----
ortho-Xylene	95-47-6	2	µg/L	----	<2	<2	<2	----
Isopropylbenzene	98-82-8	5	µg/L	----	<5	<5	<5	----
n-Propylbenzene	103-65-1	5	µg/L	----	<5	<5	<5	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	----	<5	<5	<5	----
sec-Butylbenzene	135-98-8	5	µg/L	----	<5	<5	<5	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	----	<5	<5	<5	----
tert-Butylbenzene	98-06-6	5	µg/L	----	<5	<5	<5	----
p-Isopropyltoluene	99-87-6	5	µg/L	----	<5	<5	<5	----
n-Butylbenzene	104-51-8	5	µg/L	----	<5	<5	<5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	----	<50	<50	<50	----
2-Butanone (MEK)	78-93-3	50	µg/L	----	<50	**70**	<50	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	----	<50	<50	<50	----
2-Hexanone (MBK)	591-78-6	50	µg/L	----	<50	<50	<50	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	<5	<5	<5	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	<5	<5	<5	----
1.2-Dichloropropane	78-87-5	5	µg/L	----	<5	<5	<5	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	<5	<5	<5	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	<5	<5	<5	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	<5	<5	<5	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	<50	<50	<50	----
Chloromethane	74-87-3	50	µg/L	----	<50	<50	<50	----
Vinyl chloride	75-01-4	50	µg/L	----	<50	<50	<50	----
Bromomethane	74-83-9	50	µg/L	----	<50	<50	<50	----
Chloroethane	75-00-3	50	µg/L	----	<50	<50	<50	----
Trichlorofluoromethane	75-69-4	50	µg/L	----	<50	<50	<50	----
1.1-Dichloroethene	75-35-4	5	µg/L	----	<5	<5	<5	----
Iodomethane	74-88-4	5	µg/L	----	<5	<5	<5	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	<5	<5	<5	----
1.1-Dichloroethane	75-34-3	5	µg/L	----	<5	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	<5	<5	<5	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	<5	<5	<5	----
1.1-Dichloropropylene	563-58-6	5	µg/L	----	<5	<5	<5	----
Carbon Tetrachloride	56-23-5	5	µg/L	----	<5	<5	<5	----
1.2-Dichloroethane	107-06-2	5	µg/L	----	<5	<5	<5	----
Trichloroethene	79-01-6	5	µg/L	----	<5	<5	<5	----
Dibromomethane	74-95-3	5	µg/L	----	<5	<5	<5	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	<5	<5	<5	----
1.3-Dichloropropane	142-28-9	5	µg/L	----	<5	<5	<5	----
Tetrachloroethene	127-18-4	5	µg/L	----	<5	<5	<5	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	<5	<5	<5	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	<5	<5	<5	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	<5	<5	<5	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	<5	<5	<5	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	<5	<5	<5	----
Pentachloroethane	76-01-7	5	µg/L	----	<5	<5	<5	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	----	<5	<5	<5	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	----	<5	<5	<5	----
Bromobenzene	108-86-1	5	µg/L	----	<5	<5	<5	----
2-Chlorotoluene	95-49-8	5	µg/L	----	<5	<5	<5	----
4-Chlorotoluene	106-43-4	5	µg/L	----	<5	<5	<5	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	----	<5	<5	<5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	----	<5	<5	<5	----
Bromodichloromethane	75-27-4	5	µg/L	----	<5	<5	<5	----
Dibromochloromethane	124-48-1	5	µg/L	----	<5	<5	<5	----
Bromoform	75-25-2	5	µg/L	----	<5	<5	<5	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Fluorene	86-73-7	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L	----	<1.0	<1.0	<1.0	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Pyrene	129-00-0	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	<1.0	<1.0	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	<1.0	<1.0	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	<0.5	<0.5	<0.5	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	<2	<2	<2	----
2-Chlorophenol	95-57-8	2	µg/L	----	<2	<2	<2	----
2-Methylphenol	95-48-7	2	µg/L	----	<2	<2	<2	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	<4	<4	<4	----
2-Nitrophenol	88-75-5	2	µg/L	----	<2	<2	<2	----
2.4-Dimethylphenol	105-67-9	2	µg/L	----	<2	<2	<2	----
2.4-Dichlorophenol	120-83-2	2	µg/L	----	<2	<2	<2	----
2.6-Dichlorophenol	87-65-0	2	µg/L	----	<2	<2	<2	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	<2	<2	<2	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	<2	<2	<2	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	<2	<2	<2	----
Pentachlorophenol	87-86-5	4	µg/L	----	<4	<4	<4	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	<2	<2	<2	----
2-Methylnaphthalene	91-57-6	2	µg/L	----	<2	<2	<2	----
2-Chloronaphthalene	91-58-7	2	µg/L	----	<2	<2	<2	----
Acenaphthylene	208-96-8	2	µg/L	----	<2	<2	<2	----
Acenaphthene	83-32-9	2	µg/L	----	<2	<2	<2	----
Fluorene	86-73-7	2	µg/L	----	<2	<2	<2	----
Phenanthrene	85-01-8	2	µg/L	----	<2	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	----	<2	<2	<2	----
Fluoranthene	206-44-0	2	µg/L	----	<2	<2	<2	----
Pyrene	129-00-0	2	µg/L	----	<2	<2	<2	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	<2	<2	<2	----
Benz(a)anthracene	56-55-3	2	µg/L	----	<2	<2	<2	----
Chrysene	218-01-9	2	µg/L	----	<2	<2	<2	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	<4	<4	<4	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	<2	<2	<2	----
Benzo(a)pyrene	50-32-8	2	µg/L	----	<2	<2	<2	----
3-Methylcholanthrene	56-49-5	2	µg/L	----	<2	<2	<2	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	<2	<2	<2	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	<2	<2	<2	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	<2	<2	<2	----
^ Sum of PAHs	----	2	µg/L	----	<2	<2	<2	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	<2	<2	<2	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	<2	<2	<2	----
Diethyl phthalate	84-66-2	2	µg/L	----	<2	<2	<2	----
Di-n-butyl phthalate	84-74-2	2	µg/L	----	<2	<2	<2	----
Butyl benzyl phthalate	85-68-7	2	µg/L	----	<2	<2	<2	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	<10	<10	<10	----
Di-n-octylphthalate	117-84-0	2	µg/L	----	<2	<2	<2	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	<2	<2	<2	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	<2	<2	<2	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	<4	<4	<4	----
N-Nitrosomorpholine	59-89-2	2	µg/L	----	<2	<2	<2	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	<2	<2	<2	----
N-Nitrosopiperidine	100-75-4	2	µg/L	----	<2	<2	<2	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	<2	<2	<2	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	<4	<4	<4	----
Methapyrilene	91-80-5	2	µg/L	----	<2	<2	<2	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	----	<2	<2	<2	----
Acetophenone	98-86-2	2	µg/L	----	<2	<2	<2	----
Nitrobenzene	98-95-3	2	µg/L	----	<2	<2	<2	----
Isophorone	78-59-1	2	µg/L	----	<2	<2	<2	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	<4	<4	<4	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	<4	<4	<4	----
1-Naphthylamine	134-32-7	2	µg/L	----	<2	<2	<2	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	<2	<2	<2	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	<2	<2	<2	----
Azobenzene	103-33-3	2	µg/L	----	<2	<2	<2	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	<2	<2	<2	----
Phenacetin	62-44-2	2	µg/L	----	<2	<2	<2	----
4-Aminobiphenyl	92-67-1	2	µg/L	----	<2	<2	<2	----
Pentachloronitrobenzene	82-68-8	2	µg/L	----	<2	<2	<2	----
Pronamide	23950-58-5	2	µg/L	----	<2	<2	<2	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	<2	<2	<2	----
Chlorobenzilate	510-15-6	2	µg/L	----	<2	<2	<2	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	<2	<2	<2	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	<2	<2	<2	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	<2	<2	<2	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	<2	<2	<2	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	<2	<2	<2	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	<2	<2	<2	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	<2	<2	<2	----
Hexachloroethane	67-72-1	2	µg/L	----	<2	<2	<2	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	<2	<2	<2	----
Hexachloropropylene	1888-71-7	2	µg/L	----	<2	<2	<2	----
Hexachlorobutadiene	87-68-3	2	µg/L	----	<2	<2	<2	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	<10	<10	<10	----
Pentachlorobenzene	608-93-5	2	µg/L	----	<2	<2	<2	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	<4	<4	<4	----
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	----	<2	<2	<2	----
4-Chloroaniline	106-47-8	2	µg/L	----	<2	<2	<2	----
2-Nitroaniline	88-74-4	4	µg/L	----	<4	<4	<4	----
3-Nitroaniline	99-09-2	4	µg/L	----	<4	<4	<4	----
Dibenzofuran	132-64-9	2	µg/L	----	<2	<2	<2	----
4-Nitroaniline	100-01-6	2	µg/L	----	<2	<2	<2	----
Carbazole	86-74-8	2	µg/L	----	<2	<2	<2	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	<2	<2	<2	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	----	<2	<2	<2	----
beta-BHC	319-85-7	2	µg/L	----	<2	<2	<2	----
gamma-BHC	58-89-9	2	µg/L	----	<2	<2	<2	----
delta-BHC	319-86-8	2	µg/L	----	<2	<2	<2	----
Heptachlor	76-44-8	2	µg/L	----	<2	<2	<2	----
Aldrin	309-00-2	2	µg/L	----	<2	<2	<2	----
Heptachlor epoxide	1024-57-3	2	µg/L	----	<2	<2	<2	----
alpha-Endosulfan	959-98-8	2	µg/L	----	<2	<2	<2	----
4.4`-DDE	72-55-9	2	µg/L	----	<2	<2	<2	----
Dieldrin	60-57-1	2	µg/L	----	<2	<2	<2	----
Endrin	72-20-8	2	µg/L	----	<2	<2	<2	----
beta-Endosulfan	33213-65-9	2	µg/L	----	<2	<2	<2	----
4.4`-DDD	72-54-8	2	µg/L	----	<2	<2	<2	----
Endosulfan sulfate	1031-07-8	2	µg/L	----	<2	<2	<2	----
4.4`-DDT	50-29-3	4	µg/L	----	<4	<4	<4	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	<4	<4	<4	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	<4	<4	<4	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	<2	<2	<2	----
Dimethoate	60-51-5	2	µg/L	----	<2	<2	<2	----
Diazinon	333-41-5	2	µg/L	----	<2	<2	<2	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	<2	<2	<2	----
Malathion	121-75-5	2	µg/L	----	<2	<2	<2	----
Fenthion	55-38-9	2	µg/L	----	<2	<2	<2	----
Chlorpyrifos	2921-88-2	2	µg/L	----	<2	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	----	<2	<2	<2	----
Chlorfenvinphos	470-90-6	2	µg/L	----	<2	<2	<2	----
Prothiofos	34643-46-4	2	µg/L	----	<2	<2	<2	----
Ethion	563-12-2	2	µg/L	----	<2	<2	<2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	----	105	83.2	67.6	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	----	87.1	81.7	64.1	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	----	118	123	125	----
Toluene-D8	2037-26-5	5	%	----	106	111	106	----
4-Bromofluorobenzene	460-00-4	5	%	----	110	116	112	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	----	Not Determined	31.4	24.3	----
2-Chlorophenol-D4	93951-73-6	1.0	%	----	19.8	62.6	44.2	----
2.4.6-Tribromophenol	118-79-6	1.0	%	----	20.8	69.1	57.2	----
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_231122_JF	SBT_GW_1042	SBT_GW_1037	SMGW_BH_A315	----
			Sampling date / time	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	23-Nov-2022 11:00	----
Compound	CAS Number	LOR	Unit	ES2242459-001	ES2242459-002	ES2242459-003	ES2242459-004	--------
				Result	Result	Result	Result	----
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	----	83.9	96.5	52.4	----
Anthracene-d10	1719-06-8	1.0	%	----	93.1	91.1	73.5	----
4-Terphenyl-d14	1718-51-0	1.0	%	----	88.2	102	75.8	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	----	51.6	41.1	35.6	----
Phenol-d6	13127-88-3	2	%	----	39.2	34.2	29.7	----
2-Chlorophenol-D4	93951-73-6	2	%	----	60.8	64.2	55.0	----
2.4.6-Tribromophenol	118-79-6	2	%	----	44.4	65.3	53.2	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	----	64.0	79.1	66.7	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	----	57.8	60.5	52.9	----
2-Fluorobiphenyl	321-60-8	2	%	----	61.7	72.3	57.8	----
Anthracene-d10	1719-06-8	2	%	----	74.5	79.8	64.7	----
4-Terphenyl-d14	1718-51-0	2	%	----	75.1	81.0	64.4	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	112	117	123	125	----
Toluene-D8	2037-26-5	2	%	102	101	106	100	----
4-Bromofluorobenzene	460-00-4	2	%	106	107	111	109	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	102	96.0	102	104	----
13C8-PFOA	----	0.02	%	98.0	93.6	95.0	96.6	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2242459**	Page	: 1 of 22
Amendment	: **1**		
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 23-Nov-2022
Order number	: ----	Date Analysis Commenced	: 23-Nov-2022
C-O-C number	: ----	Issue Date	: 12-Dec-2022
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4722427)									
EW2205445-007	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.95	6.03	1.3	0% - 20%
ES2242448-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.84	8.85	0.1	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4722426)									
EW2205445-007	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1	0.0	No Limit
ES2242448-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	8020	8140	1.5	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4730836)									
ES2242290-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	68	69	2.2	No Limit
ES2242459-002	SBT_GW_1042	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	8220	7660	7.1	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4722425)									
EW2205445-007	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	<1	<1	0.0	No Limit
ES2242448-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	1870	1850	0.9	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2790	2790	0.2	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	4650	4640	0.2	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4725130)									
ES2242376-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	68	67	1.9	0% - 20%
ES2242459-002	SBT_GW_1042	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	194	191	1.8	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4725132)									
ES2242414-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	46	40	14.4	0% - 20%
ES2242459-002	SBT_GW_1042	ED045G: Chloride	16887-00-6	1	mg/L	4000	3990	0.2	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED093F: Dissolved Major Cations (QC Lot: 4724524)									
ES2242436-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	184	185	0.7	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	233	236	1.5	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	2580	2610	1.2	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	38	38	0.0	0% - 20%
WN2214759-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	52	51	2.2	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	38	37	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	265	264	0.4	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	7	7	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4724526)									
ME2202015-007	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.005	0.004	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.023	0.024	0.0	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
WN2214759-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.026	0.024	7.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4724399)									
ES2242459-001	RB_231122_JF	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4724399) - continued									
ES2242459-001	RB_231122_JF	EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
WN2214749-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0007	0.0007	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.022	0.021	8.3	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.021	0.020	0.0	0% - 50%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.049	0.046	5.6	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.046	0.043	7.5	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.064	0.061	3.7	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.742	0.713	4.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.058	0.055	6.3	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.480	0.465	3.3	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	22.7	20.7	9.0	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	21.2	19.4	8.8	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4724525)									
ES2242459-002	SBT_GW_1042	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ME2202015-006	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4724401)									
ES2242399-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
WN2214759-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4724083)									
ES2241981-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.10	<0.10	0.0	No Limit
WN2214699-002	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4728556)									
ES2242290-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2242399-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.02	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4725133)									
ES2242518-004	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2242459-002	SBT_GW_1042	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4728555)									
ES2242290-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.03	0.0	No Limit
ES2242399-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4728552)									
ES2242343-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	69.0	65.5	5.2	0% - 20%
ES2242814-005	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.3	0.3	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4728551)									
ES2242399-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.01	0.02	77.9	No Limit
ES2242343-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	3.60	3.50	2.8	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4725134)									
ES2242518-004	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2242459-002	SBT_GW_1042	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4722753)									
ES2241981-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	946	997	5.2	0% - 20%
ES2242385-005	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	<1	1	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4722754)									
ES2242459-003	SBT_GW_1037	EP005: Total Organic Carbon	----	1	mg/L	15	14	0.0	0% - 50%
ES2242461-009	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	2	1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4727786)									
ES2242459-002	SBT_GW_1042	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2242518-003	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4727786)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074B: Oxygenated Compounds (QC Lot: 4727786) - continued									
ES2242459-002	SBT_GW_1042	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2242518-003	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4727786)									
ES2242459-002	SBT_GW_1042	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2242518-003	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4727786)									
ES2242459-002	SBT_GW_1042	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2242518-003	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4727786)									
ES2242459-002	SBT_GW_1042	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4727786) - continued									
ES2242459-002	SBT_GW_1042	EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2242518-003	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4727786)									
ES2242459-002	SBT_GW_1042	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074F: Halogenated Aromatic Compounds (QC Lot: 4727786) - continued									
ES2242459-002	SBT_GW_1042	EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2242518-003	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4727786)									
ES2242459-002	SBT_GW_1042	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2242518-003	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4727787)									
ES2242459-002	SBT_GW_1042	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2242518-003	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4727787)									
ES2242459-002	SBT_GW_1042	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2242518-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4727787)									
ES2242459-002	SBT_GW_1042	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2242518-003	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4724367)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4724367) - continued									
ES2242316-005	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2242316-006	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4724367)									
ES2242316-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2242316-006	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4724367)									
ES2242316-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2242316-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4725533)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	65.2	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	86.4	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	98.8	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4725533)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	70.6	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	96.4	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	105	61.5	121
EA005P: pH by PC Titrator (QCLot: 4722427)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4722426)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	95.8	89.9	110
				<1	2100 µS/cm	102	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4730836)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	93.8	87.0	109
				<10	293 mg/L	107	75.2	126
				<10	2340 mg/L	102	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4722425)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	103	81.0	111
				----	50 mg/L	112	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4725130)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	106	82.0	122
				<1	500 mg/L	103	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4725132)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	97.5	80.9	127
				<1	1000 mg/L	100	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4724524)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	91.2	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	96.4	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	95.7	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	95.2	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4724526)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	92.2	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4724526) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.5	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.7	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	92.6	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.0	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.7	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.5	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.9	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.4	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	91.1	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4724399)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	93.0	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.0	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	96.0	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.0	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.0	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.3	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.3	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.6	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.5	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.9	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.8	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4724525)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.0	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4724401)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.2	77.0	111
EG050F: Dissolved Hexavalent Chromium (QCLot: 4724083)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	94.1	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4728556)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	101	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4725133)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	110	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4728555)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	101	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4728552)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	95.2	69.0	101
				<0.1	1 mg/L	109	70.0	118
				<0.1	5 mg/L	106	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4728551)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	107	71.3	126
				<0.01	0.442 mg/L	108	71.3	126
				<0.01	1 mg/L	114	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4725134)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	107	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4722753)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	98.7	72.0	120
EP005: Total Organic Carbon (TOC) (QCLot: 4722754)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	101	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4725532)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	92.3	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	77.8	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	97.2	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	97.2	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	95.8	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	86.7	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	101	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	105	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	104	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	84.2	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	106	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	99.7	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	104	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	100	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	99.2	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	102	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	79.5	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	78.7	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	90.5	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	86.6	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	79.7	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4725532)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	86.3	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	84.6	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	25.4	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	82.2	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	95.2	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	95.8	77.0	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4725532) - continued								
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	89.1	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	100	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	102	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	104	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	92.6	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	103	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	93.2	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	101	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	99.9	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	108	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	96.3	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	80.9	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	81.4	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4725533)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4725533)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4727786)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.3	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	98.3	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	97.0	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	97.1	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	99.5	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.7	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	96.7	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	95.5	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	96.8	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	96.8	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	95.4	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	96.2	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	93.8	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	94.9	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4727786)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	98.4	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	92.9	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	101	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	95.3	65.0	137

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074C: Sulfonated Compounds (QCLot: 4727786)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	93.7	72.8	127
EP074D: Fumigants (QCLot: 4727786)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	95.4	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	97.9	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	96.4	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	96.9	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	99.0	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4727786)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	88.3	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	92.8	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	90.9	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	94.5	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	92.9	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	92.0	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	93.5	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	89.8	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	95.8	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	96.5	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	97.1	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	95.1	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	95.7	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	92.7	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	98.3	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	97.2	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	99.1	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	99.9	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	100	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	95.7	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	96.6	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	95.8	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	100	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	102	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	98.7	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	95.3	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	94.1	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4727786)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	98.1	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	98.7	76.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074F: Halogenated Aromatic Compounds (QCLot: 4727786) - continued								
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	96.6	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	97.2	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	100	67.0	123
EP074G: Trihalomethanes (QCLot: 4727786)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	99.9	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	96.2	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	95.4	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	95.8	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4725529)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	76.0	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	96.9	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	85.4	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	84.8	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	90.6	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	92.2	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	99.0	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	92.1	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	75.8	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	85.3	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	77.4	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	86.9	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	95.9	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	86.3	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	90.4	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	81.7	59.1	118
EP075A: Phenolic Compounds (QCLot: 4725531)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	35.7	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	64.8	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	60.1	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	58.0	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	73.3	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	51.0	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	73.0	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	72.8	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	75.2	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	76.1	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	79.6	58.0	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075A: Phenolic Compounds (QCLot: 4725531) - continued								
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	73.6	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4725531)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	71.4	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	72.8	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	69.9	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	79.8	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	83.1	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	83.2	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	86.7	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	85.5	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	90.6	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	87.7	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	90.3	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	88.4	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	95.2	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	92.0	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	98.8	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	89.7	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	90.8	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	85.4	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	87.5	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	84.8	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4725531)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	89.1	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	88.1	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	94.6	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	92.8	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	102	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	91.5	62.1	115
EP075D: Nitrosamines (QCLot: 4725531)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	57.3	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	70.2	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	62.6	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	61.9	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	81.5	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	73.8	61.7	107

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075D: Nitrosamines (QCLot: 4725531) - continued								
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	73.5	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	84.4	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	77.8	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4725531)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	47.4	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	77.6	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	74.9	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	80.8	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	82.4	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	84.4	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	80.5	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	91.6	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	86.5	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	86.1	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	83.3	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	80.7	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	89.2	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	86.0	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	87.6	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	92.0	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	89.5	57.7	110
EP075F: Haloethers (QCLot: 4725531)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	74.8	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	78.6	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	81.4	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	84.2	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4725531)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	64.0	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	65.4	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	66.4	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	64.5	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	69.2	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	61.8	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	65.5	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	68.4	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	77.7	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	83.3	65.7	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075H: Anilines and Benzidines (QCLot: 4725531)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	64.4	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	71.7	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	78.1	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	79.1	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	81.4	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	79.2	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	88.7	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	88.3	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4725531)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	85.0	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	88.5	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	87.6	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	85.8	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	82.6	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	89.9	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	83.9	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	91.2	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	91.8	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	90.4	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	92.2	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	90.5	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	88.1	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	95.0	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	89.5	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4725531)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	83.9	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	81.1	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	92.1	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	88.5	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	97.4	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	86.9	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	91.5	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	87.2	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	81.8	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	89.0	54.0	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075J: Organophosphorus Pesticides (QCLot: 4725531) - continued								
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	95.4	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4723743)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	59.6	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	74.0	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	80.3	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4725530)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	77.7	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	82.7	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	92.2	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4727787)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	103	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4723743)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	62.7	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	81.3	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	82.5	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4725530)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	70.5	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	72.4	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	79.7	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4727787)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	104	75.0	127
EP080: BTEXN (QCLot: 4727787)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	100	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.8	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.8	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	99.5	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	97.0	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4724367)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	94.0	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	108	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	108	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4724367)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	107	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	125	72.0	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4724367) - continued								
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	123	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	113	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4724367)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	106	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	119	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	87.8	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4725130)							
ES2242376-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4725132)							
ES2242459-002	SBT_GW_1042	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4724526)							
ES2242459-003	SBT_GW_1037	EG020A-F: Arsenic	7440-38-2	1 mg/L	103	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	90.2	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	89.4	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	106	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	98.3	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	92.6	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	88.5	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	96.3	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	92.5	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4724399)							
ES2242459-002	SBT_GW_1042	EG020A-T: Arsenic	7440-38-2	2 mg/L	92.5	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.5 mg/L	93.4	70.0	130
		EG020A-T: Chromium	7440-47-3	2 mg/L	87.4	70.0	130
		EG020A-T: Cobalt	7440-48-4	2 mg/L	93.5	70.0	130
		EG020A-T: Copper	7440-50-8	2 mg/L	92.6	70.0	130
		EG020A-T: Lead	7439-92-1	2 mg/L	90.0	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4724399) - continued							
ES2242459-002	SBT_GW_1042	EG020A-T: Manganese	7439-96-5	2 mg/L	87.9	70.0	130
		EG020A-T: Nickel	7440-02-0	2 mg/L	92.4	70.0	130
		EG020A-T: Zinc	7440-66-6	2 mg/L	90.5	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4724525)							
ES2242453-059	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	93.4	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4724401)							
ES2242405-010	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	88.6	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4724083)							
ES2241981-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	# Not Determined	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4728556)							
ES2242290-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	120	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4725133)							
ES2242459-002	SBT_GW_1042	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	110	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4728555)							
ES2242290-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	100	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4728552)							
ES2242424-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	# Not Determined	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4728551)							
ES2242424-001	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	# Not Determined	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4725134)							
ES2242459-002	SBT_GW_1042	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	98.3	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4722753)							
ES2241981-002	Anonymous	EP005: Total Organic Carbon	----	125 mg/L	116	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4722754)							
ES2242459-004	SMGW_BH_A315	EP005: Total Organic Carbon	----	100 mg/L	111	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4727786)							
ES2242459-002	SBT_GW_1042	EP074: Benzene	71-43-2	25 µg/L	107	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	105	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4727786)							
ES2242459-002	SBT_GW_1042	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	88.8	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	101	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP074F: Halogenated Aromatic Compounds (QCLot: 4727786)							
ES2242459-002	SBT_GW_1042	EP074: Chlorobenzene	108-90-7	25 µg/L	109	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4727787)							
ES2242459-002	SBT_GW_1042	EP080: C6 - C9 Fraction	----	325 µg/L	111	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4727787)							
ES2242459-002	SBT_GW_1042	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	110	70.0	130
EP080: BTEXN (QCLot: 4727787)							
ES2242459-002	SBT_GW_1042	EP080: Benzene	71-43-2	25 µg/L	109	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	106	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	109	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	106	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	107	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	114	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4724367)							
ES2242316-006	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	85.1	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	80.5	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	77.4	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4724367)							
ES2242316-006	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	80.8	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.4	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	96.9	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	89.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	78.3	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4724367)							
ES2242316-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	78.7	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	84.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	80.1	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	77.4	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2242459**	Page	: 1 of 15
Amendment	: **1**		
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 23-Nov-2022
Site	: ----	Issue Date	: 12-Dec-2022
Sampler	: JACK FLANAGAN	No. of samples received	: 4
Order number	: ----	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2242376--001	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2242459--002	SBT_GW_1042	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	ES2242424--001	Anonymous	**Total Kjeldahl Nitrogen as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK067G: Total Phosphorus as P by Discrete Analyser	ES2242424--001	Anonymous	**Total Phosphorus as P**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068T: Organophosphorus Pesticide Surrogate	ES2242459-004	SMGW_BH_A315	**DEF**	78-48-8	64.1 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	21	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	21	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT_GW_1042, SMGW_BH_A315	SBT_GW_1037,	**23-Nov-2022**	**----**	----	----	**23-Nov-2022**	23-Nov-2022	✓
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT_GW_1042, SMGW_BH_A315	SBT_GW_1037,	**23-Nov-2022**	**----**	----	----	**23-Nov-2022**	21-Dec-2022	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT_GW_1042, SMGW_BH_A315	SBT_GW_1037,	**23-Nov-2022**	**----**	----	----	**28-Nov-2022**	30-Nov-2022	✓
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT_GW_1042, SMGW_BH_A315	SBT_GW_1037,	**23-Nov-2022**	**----**	----	----	**23-Nov-2022**	07-Dec-2022	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT_GW_1042, SMGW_BH_A315	SBT_GW_1037,	**23-Nov-2022**	**----**	----	----	**24-Nov-2022**	21-Dec-2022	✓
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT_GW_1042, SMGW_BH_A315	SBT_GW_1037,	**23-Nov-2022**	**----**	----	----	**24-Nov-2022**	21-Dec-2022	✓
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT_GW_1042, SMGW_BH_A315	SBT_GW_1037,	**23-Nov-2022**	**----**	----	----	**24-Nov-2022**	21-Dec-2022	✓
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT_GW_1042, SMGW_BH_A315	SBT_GW_1037,	**23-Nov-2022**	**----**	----	----	**24-Nov-2022**	22-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) RB_231122_JF, SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**24-Nov-2022**	22-May-2023	✓	**24-Nov-2022**	22-May-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**----**	----	----	**25-Nov-2022**	21-Dec-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) RB_231122_JF	**23-Nov-2022**	**----**	----	----	**25-Nov-2022**	21-Dec-2022	✓
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050G-F) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**----**	----	----	**24-Nov-2022**	21-Dec-2022	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**----**	----	----	**26-Nov-2022**	21-Dec-2022	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**----**	----	----	**24-Nov-2022**	25-Nov-2022	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**----**	----	----	**26-Nov-2022**	21-Dec-2022	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**27-Nov-2022**	21-Dec-2022	✓	**27-Nov-2022**	21-Dec-2022	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**27-Nov-2022**	21-Dec-2022	✓	**27-Nov-2022**	21-Dec-2022	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**----**	----	----	**24-Nov-2022**	25-Nov-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**----**	----	----	**24-Nov-2022**	21-Dec-2022	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) RB_231122_JF	**23-Nov-2022**	**24-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	03-Jan-2023	✓
Amber Glass Bottle - Unpreserved (EP071) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB_231122_JF, SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) RB_231122_JF	**23-Nov-2022**	**24-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	03-Jan-2023	✓
Amber Glass Bottle - Unpreserved (EP071) SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	30-Nov-2022	✓	**29-Nov-2022**	07-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB_231122_JF, SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) RB_231122_JF, SBT_GW_1042, SBT_GW_1037, SMGW_BH_A315	**23-Nov-2022**	**28-Nov-2022**	07-Dec-2022	✓	**28-Nov-2022**	07-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
RB_231122_JF, SBT_GW_1037,	SBT_GW_1042, SMGW_BH_A315	**23-Nov-2022**	**24-Nov-2022**	22-May-2023	✓	**25-Nov-2022**	22-May-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
RB_231122_JF, SBT_GW_1037,	SBT_GW_1042, SMGW_BH_A315	**23-Nov-2022**	**24-Nov-2022**	22-May-2023	✓	**25-Nov-2022**	22-May-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
RB_231122_JF, SBT_GW_1037,	SBT_GW_1042, SMGW_BH_A315	**23-Nov-2022**	**24-Nov-2022**	22-May-2023	✓	**25-Nov-2022**	22-May-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
RB_231122_JF, SBT_GW_1037,	SBT_GW_1042, SMGW_BH_A315	**23-Nov-2022**	**24-Nov-2022**	22-May-2023	✓	**25-Nov-2022**	22-May-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	9	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	21	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	15	13.33	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Major Cations - Dissolved	ED093F	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	14	**21.43**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	17	**17.65**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	15	**6.67**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	9	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	21	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens

Invoices to: general.admin@tetratech.com

email

Mobile: emma.stephens@tetratech.com Email: jack.flanagan@tetratech.com

Phone: casey.afa.red@tetratech.com Email: esdat_labreports@coffey.com

Project No: 292575-1 Task No:

Project Name: WSA - SBT Laboratory: ALS

Sampler's Name: Jack Fanagan Project Manager: EMMA STEPHENS

Quote number (if different to current quoted prices): S4/373/22 V2

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Extended Suite)	Baseline Monitoring Rinsate	NOTES
1	RB_231122_JF	23/11/22	11:00	Water	Bottles	STD		X	
2	SBT-GW-1042						X		
3	SBT-GW-1037						X		
4	SMGW-BH-A315						X		

HT

Environmental Division
Sydney
Work Order Reference
ES2242459

Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: JACK F	Date: 23/11/22	Name: LC	Date: 23/11/22
Coffey	Time:	Company: ALS	Time: 1635
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2242849**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 25-Nov-2022 17:50
Order number	: ----	Date Analysis Commenced	: 26-Nov-2022
C-O-C number	: ----	Issue Date	: 02-Dec-2022 15:47
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EG020A-T: Positive results for sample ES2242849-004 have been confirmed by re-digestion and re-analysis.
- EP074&EP080: Positive results for ES2242849#1 and #2 have been confirmed by re-analysis.
- TDS by method EA-015 sample 2,3 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.46	6.84	6.87	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	16600	25000	21000	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	11000	19100	17800	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	475	165	203	----	----
Total Alkalinity as CaCO3	----	1	mg/L	475	165	203	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	592	721	725	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	6000	9450	7720	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	189	62	62	----	----
Magnesium	7439-95-4	1	mg/L	529	613	608	----	----
Sodium	7440-23-5	1	mg/L	2500	4220	4160	----	----
Potassium	7440-09-7	1	mg/L	43	4	3	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.17	0.02	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	0.001	0.336	0.334	----	----
Copper	7440-50-8	0.001	mg/L	0.002	<0.001	0.002	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	0.124	22.0	21.8	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	0.046	0.047	----	----
Zinc	7440-66-6	0.005	mg/L	0.034	0.053	0.053	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	5.19	5.44	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.79	0.17	24.0	----	----
Arsenic	7440-38-2	0.001	mg/L	----	----	----	<0.001	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	----	----	----	<0.001	----
Copper	7440-50-8	0.001	mg/L	----	----	----	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	**0.002**	**0.340**	**0.352**	----	----
Nickel	7440-02-0	0.001	mg/L	----	----	----	<0.001	----
Lead	7439-92-1	0.001	mg/L	----	----	----	<0.001	----
Zinc	7440-66-6	0.005	mg/L	----	----	----	**0.009**	----
Manganese	7439-96-5	0.001	mg/L	**0.188**	**22.1**	**20.6**	----	----
Iron	7439-89-6	0.05	mg/L	**1.25**	**4.99**	**62.5**	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	----	<0.0001	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.13**	**0.12**	**0.28**	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.48**	**0.06**	**0.07**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.48**	**0.06**	**0.07**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.0**	**1.6**	**1.6**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.5**	**1.7**	**1.7**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.08**	**0.82**	**0.65**	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	**0.02**	**0.01**	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**191**	**285**	**237**	----	----
ø Total Cations	----	0.01	meq/L	**163**	**237**	**234**	----	----
ø Ionic Balance	----	0.01	%	**7.98**	**9.13**	**0.59**	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**12**	**6**	**8**	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	**2**	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	<5	<5	<5	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	**110**	**80**	**70**	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	<5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	----	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	----	----
Fluorene	86-73-7	2	µg/L	<2	<2	<2	----	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	<2	<2	<2	----	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	----	----
Pyrene	129-00-0	2	µg/L	<2	<2	<2	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	----	----
Chrysene	218-01-9	2	µg/L	<2	<2	<2	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	----	----
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	----	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	----	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	----	----
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	----	----
Isophorone	78-59-1	2	µg/L	<2	<2	<2	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	----	----
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	----	----
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	----	----
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	----	----
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	<2	<2	<2	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	----	----
Carbazole	86-74-8	2	µg/L	<2	<2	<2	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	----	----
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	----	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	----	----
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	----	----
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	----	----
Aldrin	309-00-2	2	µg/L	<2	<2	<2	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	----	----
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	----	----
Endrin	72-20-8	2	µg/L	<2	<2	<2	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	----	----
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	----	----
Diazinon	333-41-5	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	----	----
Malathion	121-75-5	2	µg/L	<2	<2	<2	----	----
Fenthion	55-38-9	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	----	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	----	----
Ethion	563-12-2	2	µg/L	<2	<2	<2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	**2**	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	**2**	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**79.0**	**68.5**	**60.6**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**73.4**	**72.3**	**65.4**	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**134**	**131**	**132**	----	----
Toluene-D8	2037-26-5	5	%	**123**	**117**	**118**	----	----
4-Bromofluorobenzene	460-00-4	5	%	**123**	**116**	**116**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**27.3**	**26.9**	**26.4**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**56.7**	**52.6**	**55.8**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**70.2**	**62.8**	**44.1**	----	----
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1005	SBT-GW-1017S	SBT-GW-1017D	RB_251122_JP	----
			Sampling date / time	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	25-Nov-2022 12:00	----
Compound	CAS Number	LOR	Unit	ES2242849-001	ES2242849-002	ES2242849-003	ES2242849-004	--------
				Result	Result	Result	Result	----
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	73.6	60.7	60.9	----	----
Anthracene-d10	1719-06-8	1.0	%	98.6	84.9	74.8	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	93.3	108	92.1	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	43.5	39.4	40.1	----	----
Phenol-d6	13127-88-3	2	%	32.1	28.1	28.6	----	----
2-Chlorophenol-D4	93951-73-6	2	%	60.7	52.5	53.1	----	----
2.4.6-Tribromophenol	118-79-6	2	%	74.5	60.9	55.6	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	73.2	60.5	61.0	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	58.5	49.7	50.9	----	----
2-Fluorobiphenyl	321-60-8	2	%	68.7	49.6	55.8	----	----
Anthracene-d10	1719-06-8	2	%	84.6	70.2	64.1	----	----
4-Terphenyl-d14	1718-51-0	2	%	86.6	70.9	63.2	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	123	125	126	----	----
Toluene-D8	2037-26-5	2	%	125	125	127	----	----
4-Bromofluorobenzene	460-00-4	2	%	122	126	126	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	100	100	101	----	----
13C8-PFOA	----	0.02	%	95.3	94.8	91.8	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2242849**	Page	: 1 of 20
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 25-Nov-2022
Order number	: ----	Date Analysis Commenced	: 26-Nov-2022
C-O-C number	: ----	Issue Date	: 02-Dec-2022
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4728964)									
ES2242500-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.29	7.33	0.5	0% - 20%
ES2242518-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.28	7.24	0.6	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4728961)									
ES2242510-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1090	1090	0.2	0% - 20%
ES2242836-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	55100	55200	0.1	0% - 20%
ES2242414-007	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	205	195	5.3	0% - 20%
ES2242500-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	78	79	1.4	0% - 20%
ES2242518-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	3570	3590	0.4	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4734934)									
ES2242565-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	245	231	5.9	0% - 20%
ES2242849-003	SBT-GW-1017D	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	17800	17100	3.9	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4728966)									
ES2242836-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	144	144	0.0	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	24	24	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	169	168	0.9	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4728584)									
ES2242745-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	836	829	1.0	0% - 20%
ES2242876-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	204	207	1.5	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4728581)									
ES2242629-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	2	2	0.0	No Limit
ES2242876-003	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	14	14	0.0	0% - 50%
ED093F: Dissolved Major Cations (QC Lot: 4733753)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED093F: Dissolved Major Cations (QC Lot: 4733753) - continued									
ES2242876-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	40	42	2.6	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	30	30	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	16	13	20.5	0% - 50%
		ED093F: Potassium	7440-09-7	1	mg/L	6	6	0.0	No Limit
ES2242654-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	573	578	1.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	536	540	0.8	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	583	586	0.5	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	74	75	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4733754)									
ES2242876-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	1.17	1.19	1.9	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.06	<0.05	20.8	No Limit
ES2242654-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.007	0.008	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.804	0.807	0.4	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.040	0.040	0.0	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4733728)									
ES2242758-015	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4733728) - continued									
ES2242758-015	Anonymous	EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.028	0.027	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
WN2214943-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	1.61	1.61	0.3	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.011	0.012	9.0	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.010	0.009	14.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.84	0.84	0.0	0% - 50%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4733756)									
ES2242849-002	SBT-GW-1017S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
WN2214954-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4733803)									
ES2242849-004	RB_251122_JP	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4728809)									
ES2241845-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2242281-003	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4734163)									
ES2242762-021	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.52	0.51	0.0	0% - 20%
ES2242762-030	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.07	0.07	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4728585)									
ES2242745-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.19	0.19	0.0	0% - 50%
ES2242876-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4734165)									
ES2242877-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.06	0.06	0.0	No Limit
WN2214943-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.02	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4734162)									
EW2205471-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	166	146	12.5	0% - 20%
ES2242832-007	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.0	1.8	10.6	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4734161)									
EW2205471-002	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	357	347	3.0	0% - 20%
ES2242832-007	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.90	0.94	3.8	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4728583)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4728583) - continued									
ES2242878-003	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2242629-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4729335)									
ES2242543-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	2940	3000	2.1	0% - 20%
ES2242704-002	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	9	9	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4738697)									
ES2242690-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2243104-002	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4738697)									
ES2242690-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074B: Oxygenated Compounds (QC Lot: 4738697) - continued									
ES2242690-001	Anonymous	EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2243104-002	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4738697)									
ES2242690-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2243104-002	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4738697)									
ES2242690-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2243104-002	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4738697)									
ES2242690-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4738697) - continued									
ES2242690-001	Anonymous	EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2243104-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4738697)									
ES2242690-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074F: Halogenated Aromatic Compounds (QC Lot: 4738697) - continued									
ES2243104-002	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4738697)									
ES2242690-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2243104-002	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	37	46	23.8	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	50	51	0.0	0% - 50%
		EP074: Dibromochloromethane	124-48-1	5	µg/L	42	42	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	11	12	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4738696)									
ES2242690-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2243104-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	40	50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4738696)									
ES2242690-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2243104-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	50	50	0.0	No Limit
EP080: BTEXN (QC Lot: 4738696)									
ES2242690-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2243104-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4729932)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	68.4	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	92.4	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	91.6	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4729932)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	75.1	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	95.5	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	91.2	61.5	121
EA005P: pH by PC Titrator (QCLot: 4728964)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4728961)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	92.9	89.9	110
				<1	2100 µS/cm	96.1	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4734934)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	92.3	87.0	109
				<10	293 mg/L	103	75.2	126
				<10	2340 mg/L	104	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4728966)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	99.1	81.0	111
				----	50 mg/L	110	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4728584)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	104	82.0	122
				<1	500 mg/L	105	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4728581)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	100	80.9	127
				<1	1000 mg/L	108	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4733753)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	99.8	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	94.8	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	95.2	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	97.9	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4733754)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	90.1	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4733754) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.6	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	91.3	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.8	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.0	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.6	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	94.2	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.8	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	88.2	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	92.4	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	93.3	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4733728)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	104	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	99.6	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	102	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	100	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.6	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	101	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4733756)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.2	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4733803)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.7	77.0	111
EG050F: Dissolved Hexavalent Chromium (QCLot: 4728809)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	105	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4734163)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4728585)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	106	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4734165)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	105	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4734162)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	83.3	69.0	101
				<0.1	1 mg/L	95.5	70.0	118
				<0.1	5 mg/L	92.4	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4734161)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	103	71.3	126
				<0.01	0.442 mg/L	100	71.3	126
				<0.01	1 mg/L	109	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4728583)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	112	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4729335)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	100	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4729929)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	78.6	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	77.5	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	81.0	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	78.8	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	84.7	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	105	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	80.8	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	86.2	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	88.2	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	96.4	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	86.6	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	79.4	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	94.9	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	94.6	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	87.2	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	85.0	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	80.6	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	92.5	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	92.2	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	95.1	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	91.5	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4729929)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	84.9	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	94.6	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.6	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	78.4	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	82.8	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	87.0	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	96.6	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	86.2	68.4	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4729929) - continued								
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	83.7	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	83.6	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	75.6	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	85.3	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	95.8	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	93.6	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	91.9	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	93.8	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	84.1	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	90.4	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	84.0	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4729932)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4729932)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4738697)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	98.0	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	103	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	99.7	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	100	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	94.6	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	102	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	99.4	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	99.5	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	98.5	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	101	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	98.6	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	99.0	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	99.0	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	103	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4738697)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	92.3	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	114	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	91.3	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	106	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4738697)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	86.1	72.8	127

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074D: Fumigants (QCLot: 4738697)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	104	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	93.1	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	95.5	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	96.4	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	91.7	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4738697)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	93.0	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	94.3	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	97.9	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	102	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	98.4	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	96.6	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	92.2	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	90.8	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	94.7	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	93.3	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	98.7	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	100	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	98.6	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	102	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	97.5	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	97.0	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	95.1	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	94.9	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	97.2	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	102	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	95.1	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	93.6	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	94.8	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	101	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	98.4	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	93.6	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	88.6	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4738697)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	96.8	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	94.4	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	101	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	103	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	104	67.0	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074G: Trihalomethanes (QCLot: 4738697)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	102	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	93.2	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	93.8	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	101	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4729928)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	75.7	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	87.4	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	88.5	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	98.0	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	96.0	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	97.3	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	93.8	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	101	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	98.6	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	104	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	83.4	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	83.2	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	97.8	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	102	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	99.3	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	66.8	59.1	118
EP075A: Phenolic Compounds (QCLot: 4729930)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	38.7	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	71.4	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	66.4	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	65.0	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	79.0	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	81.6	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	83.4	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	80.3	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	85.0	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	87.6	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	92.0	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	# 95.8	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4729930)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	70.5	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	72.7	59.0	108

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4729930) - continued								
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	69.5	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	80.7	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	84.2	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	87.5	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	95.6	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	92.3	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	98.4	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	96.6	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	107	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	95.7	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	103	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	103	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	# 124	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	105	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	107	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	102	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	99.8	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	97.9	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4729930)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	95.9	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	100	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	104	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	103	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	113	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	109	62.1	115
EP075D: Nitrosamines (QCLot: 4729930)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	62.8	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	71.5	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	68.4	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	65.2	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	86.9	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	81.9	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	80.0	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	93.1	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	54.6	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4729930)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 4729930) - continued								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	51.5	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	83.1	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	78.9	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	88.6	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	90.5	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	93.5	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	97.2	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	# 108	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	97.0	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	91.0	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	99.2	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	100	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	94.0	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	94.0	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	101	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	102	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	101	57.7	110
EP075F: Haloethers (QCLot: 4729930)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	76.2	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	83.6	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	84.6	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	89.7	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4729930)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	60.8	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	59.5	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	63.7	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	57.4	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	61.0	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	58.1	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	60.1	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	60.9	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	81.1	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	89.2	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4729930)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	72.0	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	83.6	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	88.9	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	92.0	51.5	96.9

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075H: Anilines and Benzidines (QCLot: 4729930) - continued								
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	83.3	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	93.8	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	99.6	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	108	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4729930)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	93.4	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	98.2	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	97.1	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	97.6	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	96.3	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	93.5	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	102	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	101	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	98.3	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	102	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	102	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	99.0	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	102	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	97.7	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	103	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4729930)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	99.8	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	92.6	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	103	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	98.9	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	108	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	99.5	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	102	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	101	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	93.0	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	100.0	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	106	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4729931)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	73.9	53.7	97.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4729931) - continued								
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	90.0	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	112	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4738696)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	90.2	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4729931)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	80.1	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	100.0	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	104	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4738696)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	94.3	75.0	127
EP080: BTEXN (QCLot: 4738696)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	91.5	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	96.9	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.4	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	99.2	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.3	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	92.8	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4734595)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	109	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	112	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4734595)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	111	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	114	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4734595)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	110	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	122	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	109	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	97.4	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4728584)							
ES2242745-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4728581)							
ES2242629-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	99.7	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4733754)							
ES2242654-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	93.2	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	93.9	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	94.8	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	96.4	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	87.9	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	93.4	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	94.0	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	93.8	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4733728)							
ES2242795-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	103	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	101	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	97.6	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	98.6	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	101	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	97.4	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	98.7	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	99.3	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.8	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4733756)							
ES2242849-001	SBT-GW-1005	EG035F: Mercury	7439-97-6	0.01 mg/L	94.5	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4733803)							
ES2242866-059	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	91.2	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4728809)							
ES2241845-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	93.2	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4734163)							
ES2242762-021	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	101	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4728585)							
ES2242745-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	95.2	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4734165)							
WN2214943-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	105	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4734162)							
ES2242849-001	SBT-GW-1005	EK061G: Total Kjeldahl Nitrogen as N	----	25 mg/L	96.9	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4734161)							
ES2242849-001	SBT-GW-1005	EK067G: Total Phosphorus as P	----	2 mg/L	110	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4728583)							
ES2242629-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	100	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4729335)							
ES2242543-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	# Not Determined	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4738697)							
ES2242690-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	103	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	95.4	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4738697)							
ES2242690-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	82.7	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	93.5	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4738697)							
ES2242690-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	91.8	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4738696)							
ES2242690-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	96.7	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4738696)							
ES2242690-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	98.2	70.0	130
EP080: BTEXN (QCLot: 4738696)							
ES2242690-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	92.4	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	96.3	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.8	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	100	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	97.3	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	90.8	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2242849**	Page	: 1 of 15
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 292575-1 WSA SBT	Date Samples Received	: 25-Nov-2022
Site	: ----	Issue Date	: 02-Dec-2022
Sampler	: JACK FLANAGAN	No. of samples received	: 4
Order number	: ----	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075A: Phenolic Compounds	QC-4729930-002	----	**Pentachlorophenol**	87-86-5	95.8 %	12.8-95.0%	**Recovery greater than upper control limit**
EP075B: Polynuclear Aromatic Hydrocarbons	QC-4729930-002	----	**7.12-Dimethylbenz(a)anthracene**	57-97-6	124 %	50.0-108%	**Recovery greater than upper control limit**
EP075E: Nitroaromatics and Ketones	QC-4729930-002	----	**4-Nitroquinoline-N-oxide**	56-57-5	108 %	40.0-96.0%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2242745--001	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP005: Total Organic Carbon (TOC)	ES2242543--002	Anonymous	**Total Organic Carbon**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2242849-003	SBT-GW-1017D	**Dibromo-DDE**	21655-73-2	60.6 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2242849-003	SBT-GW-1017D	**DEF**	78-48-8	65.4 %	66.5-111 %	**Recovery less than lower data quality objective**
EP074S: VOC Surrogates	ES2242849-001	SBT-GW-1005	**1.2-Dichloroethane-D4**	17060-07-0	134 %	78.3-133 %	**Recovery greater than upper data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural						
SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	----	----	----	26-Nov-2022	25-Nov-2022	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP) - Continued					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**----**	----	----	**26-Nov-2022**	25-Nov-2022	×
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P)							
SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**----**	----	----	**26-Nov-2022**	23-Dec-2022	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**----**	----	----	**29-Nov-2022**	02-Dec-2022	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**----**	----	----	**26-Nov-2022**	09-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**----**	----	----	**26-Nov-2022**	23-Dec-2022	✓
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**----**	----	----	**26-Nov-2022**	23-Dec-2022	✓
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**----**	----	----	**29-Nov-2022**	23-Dec-2022	✓
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**----**	----	----	**29-Nov-2022**	24-May-2023	✓
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
SBT-GW-1005, SBT-GW-1017D,	SBT-GW-1017S, RB_251122_JP	**25-Nov-2022**	**29-Nov-2022**	24-May-2023	✓	**29-Nov-2022**	24-May-2023	✓
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**----**	----	----	**29-Nov-2022**	23-Dec-2022	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)								
RB_251122_JP		**25-Nov-2022**	**----**	----	----	**29-Nov-2022**	23-Dec-2022	✓
EG050F: Dissolved Hexavalent Chromium								
Clear Plastic Bottle - NaOH Filtered (EG050G-F)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**----**	----	----	**26-Nov-2022**	23-Dec-2022	✓
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**----**	----	----	**29-Nov-2022**	23-Dec-2022	✓
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**----**	----	----	**26-Nov-2022**	27-Nov-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**----**	----	----	**29-Nov-2022**	23-Dec-2022	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	23-Dec-2022	✓	**29-Nov-2022**	23-Dec-2022	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	23-Dec-2022	✓	**29-Nov-2022**	23-Dec-2022	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**----**	----	----	**26-Nov-2022**	27-Nov-2022	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**----**	----	----	**28-Nov-2022**	23-Dec-2022	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1005, SBT-GW-1017S, SBT-GW-1017D	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**29-Nov-2022**	02-Dec-2022	✓	**30-Nov-2022**	08-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**01-Dec-2022**	09-Dec-2022	✓	**01-Dec-2022**	09-Dec-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**29-Nov-2022**	24-May-2023	✓	**29-Nov-2022**	24-May-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**29-Nov-2022**	24-May-2023	✓	**29-Nov-2022**	24-May-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**29-Nov-2022**	24-May-2023	✓	**29-Nov-2022**	24-May-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT-GW-1005, SBT-GW-1017D	SBT-GW-1017S,	**25-Nov-2022**	**29-Nov-2022**	24-May-2023	✓	**29-Nov-2022**	24-May-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	5	43	11.63	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	8	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	5	40.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	43	9.30	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	17	**17.65**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	15	**20.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	43	**2.33**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	8	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens email: emma.stephens@tetratech.com Email: jack.fanagan@tetratech.com

Invoices to: general-admin@tetratech.com Phone: casey.otarsele@tetratech.com Email: edat_labreports@coffey.com

Project No: 292575-1 Task No:

Project Name: WSA - SBT Laboratory: ALS

Sampler's Name: Jack Fanagan Project Manager: EMMA STEPHENS

Quote number (if different to current quoted prices): S4/3732/22 V2

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Boulia Monitoring (reserved ones)	Boulia Monitoring (Private)	NOTES
1	SBT-GW-1005	25/11/22	12:00	W	Bottles	STD	X		
2	SBT-GW-1017S	↓	↓	↓	↓	↓	X		
3	SBT-GW-1017D	↓	↓	↓	↓	↓	X		
4	RB_251122_JP	↓	↓	↓	↓	↓		X	

HT

Environmental Division Sydney
Work Order Reference
ES2242849

Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jorja Pendlebury	Date: 25.11.22	Name: LC	Date: 25/11/22
Coffey	Time: 1300	Company: ALS	Time: 1750
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

CERTIFICATE OF ANALYSIS

Work Order	: **ES2242982**	Page	: 1 of 43
Amendment	: **1**		
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 28-Nov-2022 16:50
Order number	: ----	Date Analysis Commenced	: 29-Nov-2022
C-O-C number	: ----	Issue Date	: 08-Dec-2022 20:57
Sampler	: JACK FLANAGAN		
Site	:		
Quote number	: SY/373/22_V2		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG050G: LOR raised for Hexavalent Chromium on sample 1 due to sample matrix.
- EG050G: Poor spike recovery for Hexavalent Chromium due to matrix interferences(confirmed by re-analysis).
- EG020: It has been confirmed by re-digestion and re-analysis that dissolved concentration of some elements is higher than total concentration for sample ES2242982-011. For all other elements where filtered results are greater than total results, the difference is within experimental variation of the methods.
- EG035: Positive Mercury results ES2242982 #7 and #8 have been confirmed by reanalysis.
- TDS by method EA-015 sample 3,4 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Amendment (08/12/2022): This report has been amended and re-released to allow the reporting of corrected sample ID's.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.26	7.33	7.36	7.19	7.44
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	28900	26200	28900	966	925
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	21000	18600	21200	808	564
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	590	512	605	289	280
Total Alkalinity as CaCO3	----	1	mg/L	590	512	605	289	280
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	739	676	754	57	60
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	10200	9280	10300	129	107
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	401	437	451	29	30
Magnesium	7439-95-4	1	mg/L	922	1000	957	20	12
Sodium	7440-23-5	1	mg/L	4500	4770	4690	203	159
Potassium	7440-09-7	1	mg/L	17	16	18	4	5
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.08	0.04	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.027	0.036	0.024	0.003	0.003
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	1.15	1.30	1.09	0.084	0.083
Nickel	7440-02-0	0.001	mg/L	0.013	0.015	0.016	0.002	0.003
Zinc	7440-66-6	0.005	mg/L	<0.005	0.010	0.012	0.017	0.017
Iron	7439-89-6	0.05	mg/L	4.96	7.51	5.47	0.10	<0.05
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	5.26	9.08	4.60	5.28	2.18
Cobalt	7440-48-4	0.001	mg/L	0.034	0.042	0.038	0.011	0.004

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	1.91	1.50	2.18	0.151	0.121
Iron	7439-89-6	0.05	mg/L	39.6	26.4	45.7	18.5	12.4
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	1.00	0.99	0.90	3.14	3.66
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	0.02	0.02
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	0.02	0.15	0.02
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.02	0.17	0.04
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	3.8	2.0	7.1	5.4	4.9
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	3.8	2.0	7.1	5.6	4.9
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	1.11	0.42	2.32	0.64	0.38
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	315	286	318	10.6	9.86
ø Total Cations	----	0.01	meq/L	292	312	306	12.0	9.53
ø Ionic Balance	----	0.01	%	3.76	4.33	2.02	6.30	1.72
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	<1	7	8	6	7
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<5	<5
Toluene	108-88-3	2	µg/L	<2	<2	<2	<5	<5
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<5	<5
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<10	<10
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<5	<5
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	**70**	**80**	**60**	**150**
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	**170**	**170**
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	**12**	**13**
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	**28**	**19**	**1500**	**1640**
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	**5**	<5	**325**	**489**
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	**10**	**20**	**15**	**225**	**382**
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	**13**	**8**	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	**50**	**40**	**1300**	**1710**
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	**50**	**30**	**1280**	**1690**
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	**50**	**30**	**1280**	**1690**
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<5	<5
Toluene	108-88-3	2	µg/L	<2	<2	<2	<5	<5
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<5	<5
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<5	<5
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<2	<2
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	**0.73**	**0.93**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	**0.02**	**0.02**
EP231D: (n:2) Fluorotelomer Sulfonic Acids								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	0.73	0.93
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	0.75	0.95
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	78.8	92.0	78.6	67.1	60.5
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	79.8	98.2	84.7	72.8	64.9
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	114	111	111	89.3	92.0
Toluene-D8	2037-26-5	5	%	102	111	98.6	108	109
4-Bromofluorobenzene	460-00-4	5	%	114	106	112	101	104
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	18.6	22.6	23.0	17.3	17.7
2-Chlorophenol-D4	93951-73-6	1.0	%	41.3	42.7	40.6	37.8	32.4
2.4.6-Tribromophenol	118-79-6	1.0	%	53.9	68.8	64.6	60.3	44.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	60.3	70.5	64.8	58.5	50.1
Anthracene-d10	1719-06-8	1.0	%	68.2	82.7	64.0	65.4	57.3
4-Terphenyl-d14	1718-51-0	1.0	%	72.0	84.3	73.9	66.0	60.8
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	37.4	42.7	41.7	36.8	33.1
Phenol-d6	13127-88-3	2	%	26.0	32.8	29.5	27.0	23.4
2-Chlorophenol-D4	93951-73-6	2	%	54.8	55.9	55.7	51.2	44.8
2.4.6-Tribromophenol	118-79-6	2	%	48.2	59.5	52.2	45.3	35.1
EP075T: Base/Neutral Extractable Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_1019R_S	SBT_GW_1019R_M	SBT_GW_1019R_D	MW1_S	MW1_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-001	ES2242982-002	ES2242982-003	ES2242982-004	ES2242982-005
				Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	2	%	62.4	63.8	64.2	56.5	50.6
1.2-Dichlorobenzene-D4	2199-69-1	2	%	45.0	50.5	50.7	46.4	41.6
2-Fluorobiphenyl	321-60-8	2	%	52.8	58.6	56.6	51.4	46.1
Anthracene-d10	1719-06-8	2	%	63.0	74.2	68.6	57.5	52.8
4-Terphenyl-d14	1718-51-0	2	%	63.8	73.6	67.0	56.4	50.0
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	126	126	123	101	104
Toluene-D8	2037-26-5	2	%	128	110	124	107	108
4-Bromofluorobenzene	460-00-4	2	%	120	108	119	108	110
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	98.6	101	94.5	93.9	98.1
13C8-PFOA	----	0.02	%	92.1	96.5	91.5	88.3	88.8

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.19	6.26	6.30	6.36	6.22
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	956	8390	8490	3480	4110
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	608	5260	5070	2060	2390
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	290	54	53	26	49
Total Alkalinity as CaCO3	----	1	mg/L	290	54	53	26	49
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	55	216	214	364	351
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	116	2900	2870	922	1130
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	23	19	19	8	9
Magnesium	7439-95-4	1	mg/L	13	124	126	40	36
Sodium	7440-23-5	1	mg/L	178	1530	1550	672	771
Potassium	7440-09-7	1	mg/L	5	1	1	2	2
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.01	<0.01	0.11	0.04
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0002	0.0002	0.0001	0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.002	0.056	0.057	0.026	0.026
Copper	7440-50-8	0.001	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	0.076	0.214	0.215	0.393	0.426
Nickel	7440-02-0	0.001	mg/L	0.002	0.022	0.029	0.015	0.016
Zinc	7440-66-6	0.005	mg/L	0.015	0.191	0.134	0.100	0.065
Iron	7439-89-6	0.05	mg/L	0.15	<0.05	<0.05	0.73	2.24
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	9.66	0.19	0.69	10.2	2.12
Cobalt	7440-48-4	0.001	mg/L	0.009	0.059	0.060	0.040	0.030

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.128	0.223	0.225	0.673	0.533
Iron	7439-89-6	0.05	mg/L	18.6	0.43	1.27	19.4	6.16
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0001	0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	<0.10	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.10	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	2.82	0.09	0.08	0.09	0.20
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.02	<0.01	<0.01	0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.26	<0.01	<0.01	0.10	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.28	<0.01	<0.01	0.11	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	4.7	0.4	0.6	0.8	0.6
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	5.0	0.4	0.6	0.9	0.6
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.49	0.03	0.17	0.16	0.09
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.02	0.02	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	10.2	87.4	86.5	34.1	40.2
ø Total Cations	----	0.01	meq/L	10.1	77.7	78.8	33.0	37.0
ø Ionic Balance	----	0.01	%	0.61	5.84	4.66	1.69	4.10
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	8	2	2	5	5
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	----	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	----	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	----	<2.0	<2.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<5	<5	----	<1	<1
Toluene	108-88-3	2	µg/L	<5	<5	----	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<5	<5	----	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<10	<10	----	<2	<2
Styrene	100-42-5	5	µg/L	<5	<5	----	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<5	<5	----	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	----	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	----	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	----	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	----	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	----	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	----	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	----	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	----	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	----	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	**80**	<50	----	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	----	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	----	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	----	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	----	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	----	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	----	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	----	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	----	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	----	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	----	<50	<50
Vinyl chloride	75-01-4	50	µg/L	**80**	<50	----	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	----	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	----	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	----	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	----	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	----	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	**10**	<5	----	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	----	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	**1290**	**7**	----	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	----	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	----	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	----	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	----	<5	<5
Trichloroethene	79-01-6	5	µg/L	**858**	**90**	----	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	----	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	----	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	----	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	**979**	**1900**	----	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	----	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	----	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	----	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	----	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	----	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	----	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	----	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	----	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	----	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	----	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	----	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	----	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	----	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	----	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	----	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	----	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	**3**	<2	----	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	----	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	----	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	**12**	<4	----	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	----	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	----	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	----	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	----	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	----	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	----	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	----	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	----	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	----	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	----	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	----	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	----	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	----	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	----	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	----	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	----	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	----	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	----	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	----	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	----	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	----	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	----	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	----	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	----	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	----	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	----	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	----	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	----	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	----	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	----	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	----	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	----	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	----	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	----	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	----	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	----	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	----	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	----	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	----	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	----	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	----	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	----	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	----	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	----	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	----	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	----	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	----	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	----	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	----	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	----	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	----	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	----	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	----	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	----	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	<2	<2	----	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	----	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	----	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	----	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	----	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	----	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	----	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	----	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	----	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	----	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	----	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	----	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	----	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	----	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	----	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	----	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	----	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	----	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	----	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	----	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	----	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	----	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	----	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	----	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	----	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	----	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	----	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	----	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	----	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	----	<2	<2
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	<2	<2	----	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	----	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	----	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	----	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	----	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	----	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	----	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	----	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	----	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	----	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	----	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	----	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	----	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	----	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	----	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	----	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	----	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	----	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	----	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	----	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	----	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	----	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	----	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	----	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	----	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	----	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	----	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	----	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	**2250**	**1580**	**2340**	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	**2230**	**1570**	**2340**	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	**2230**	**1570**	**2340**	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<5	<5	<1	<1	<1
Toluene	108-88-3	2	µg/L	<5	<5	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<5	<5	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<5	<5	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<5	<5	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<2	<2	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	----	**0.01**	**0.01**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.84**	**0.05**	----	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**0.02**	----	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	**0.01**	----	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.84**	**0.05**	----	**0.01**	**0.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.86**	**0.08**	----	**0.01**	**0.01**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**89.9**	**82.2**	----	**72.8**	**75.6**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**96.5**	**87.5**	----	**80.9**	**86.4**
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**90.2**	**88.6**	----	**118**	**112**
Toluene-D8	2037-26-5	5	%	**106**	**97.6**	----	**122**	**118**
4-Bromofluorobenzene	460-00-4	5	%	**101**	**93.7**	----	**114**	**109**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**22.1**	**17.8**	----	**22.0**	**24.9**
2-Chlorophenol-D4	93951-73-6	1.0	%	**45.5**	**37.4**	----	**38.8**	**41.6**
2.4.6-Tribromophenol	118-79-6	1.0	%	**69.3**	**48.9**	----	**59.4**	**62.6**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	**74.1**	**66.0**	----	**63.9**	**66.4**
Anthracene-d10	1719-06-8	1.0	%	**82.5**	**66.8**	----	**69.6**	**73.6**
4-Terphenyl-d14	1718-51-0	1.0	%	**80.0**	**70.9**	----	**65.3**	**75.1**
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	**42.8**	**32.7**	----	**39.5**	**43.0**
Phenol-d6	13127-88-3	2	%	**33.6**	**23.8**	----	**28.4**	**31.1**
2-Chlorophenol-D4	93951-73-6	2	%	**59.8**	**47.1**	----	**51.9**	**56.0**
2.4.6-Tribromophenol	118-79-6	2	%	**59.5**	**35.0**	----	**49.3**	**53.6**
EP075T: Base/Neutral Extractable Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_D	SMGW_GW02_S	SMGW_GW02_D	SBT_CM_1020_S	SBT_CM_1020_M
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2242982-006	ES2242982-007	ES2242982-008	ES2242982-009	ES2242982-010
				Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	2	%	67.3	60.7	----	59.3	61.5
1.2-Dichlorobenzene-D4	2199-69-1	2	%	53.3	51.6	----	48.3	50.3
2-Fluorobiphenyl	321-60-8	2	%	65.2	57.6	----	56.0	57.8
Anthracene-d10	1719-06-8	2	%	75.3	63.3	----	63.3	67.1
4-Terphenyl-d14	1718-51-0	2	%	72.9	66.0	----	60.1	65.4
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	102	99.9	130	134	126
Toluene-D8	2037-26-5	2	%	105	96.1	117	121	117
4-Bromofluorobenzene	460-00-4	2	%	107	99.5	110	115	112
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	97.3	105	----	104	91.3
13C8-PFOA	----	0.02	%	89.3	89.0	----	91.3	94.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.37**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**4100**	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**2420**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**55**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**55**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**328**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**1140**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**14**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**42**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**863**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**3**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.004**	----	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.026**	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	**0.537**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.016**	----	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	**0.054**	----	<0.005	----	----
Iron	7439-89-6	0.05	mg/L	**7.52**	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.72**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	----	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	----	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	----	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	----	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.026**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	----	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	----	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	----	<0.005	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.442**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**5.56**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	----	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	----	----	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.12**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.01**	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.06**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.07**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.5**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.6**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.07**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**40.1**	----	----	----	----
ø Total Cations	----	0.01	meq/L	**41.8**	----	----	----	----
ø Ionic Balance	----	0.01	%	**2.06**	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	<5	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	----	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	----	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	----	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	----	----	----	----
Bromoform	75-25-2	5	µg/L	<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	----	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	----	----	----	----
Fluorene	86-73-7	2	µg/L	<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	----	----	----	----
Pyrene	129-00-0	2	µg/L	<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	----	----	----	----
Chrysene	218-01-9	2	µg/L	<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	----	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	----	----	----	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	<2	----	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	----	----	----	----
Isophorone	78-59-1	2	µg/L	<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	----	----	----	----
Azobenzene	103-33-3	2	µg/L	<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	----	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	----	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	----	----	----	----
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	<2	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	----	----	----	----
Carbazole	86-74-8	2	µg/L	<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	----	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	----	----	----	----
Aldrin	309-00-2	2	µg/L	<2	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	----	----	----	----
Endrin	72-20-8	2	µg/L	<2	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	----	----	----	----
Diazinon	333-41-5	2	µg/L	<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	----	----
Malathion	121-75-5	2	µg/L	<2	----	----	----	----
Fenthion	55-38-9	2	µg/L	<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	----	----	----	----
Ethion	563-12-2	2	µg/L	<2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**84.9**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**97.5**	----	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**108**	----	----	----	----
Toluene-D8	2037-26-5	5	%	**111**	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	**105**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**25.3**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**45.5**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**70.6**	----	----	----	----
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_CM_1020_D	RB_281122_JF	TB_281122_JF	----	----
			Sampling date / time	28-Nov-2022 00:00	28-Nov-2022 00:00	28-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2242982-011	ES2242982-012	ES2242982-013	--------	--------
				Result	Result	Result	----	----
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	71.7	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	82.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	83.2	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	47.0	----	----	----	----
Phenol-d6	13127-88-3	2	%	33.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	61.6	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	61.2	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	69.5	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	55.2	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	64.3	----	----	----	----
Anthracene-d10	1719-06-8	2	%	73.0	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	70.8	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	122	119	122	----	----
Toluene-D8	2037-26-5	2	%	110	104	110	----	----
4-Bromofluorobenzene	460-00-4	2	%	107	105	108	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	95.5	98.3	98.3	----	----
13C8-PFOA	----	0.02	%	89.5	89.8	91.9	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2242982**	Page	: 1 of 25
Amendment	: **1**		
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 28-Nov-2022
Order number	: ----	Date Analysis Commenced	: 29-Nov-2022
C-O-C number	: ----	Issue Date	: 08-Dec-2022
Sampler	: JACK FLANAGAN		
Site	:		
Quote number	: SY/373/22_V2		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4735552)									
ES2242982-003	SBT_GW_1019R_D	EA005-P: pH Value	----	0.01	pH Unit	7.36	7.31	0.7	0% - 20%
ES2242982-006	MW1_D	EA005-P: pH Value	----	0.01	pH Unit	7.19	7.12	1.0	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4735551)									
ES2242982-003	SBT_GW_1019R_D	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	28900	28600	0.9	0% - 20%
ES2242982-006	MW1_D	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	956	956	0.0	0% - 20%
EW2205485-005	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	76	75	0.0	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4734934)									
ES2242565-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	245	231	5.9	0% - 20%
ES2242849-003	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	17800	17100	3.9	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4734935)									
ES2242982-005	MW1_M	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	564	560	0.6	0% - 20%
EW2205485-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	90	87	3.7	No Limit
ED037P: Alkalinity by PC Titrator (QC Lot: 4735550)									
ES2242982-003	SBT_GW_1019R_D	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	605	596	1.5	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	605	596	1.5	0% - 20%
ES2242982-006	MW1_D	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	290	288	0.5	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	290	288	0.5	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4735266)									
ES2242794-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	34	34	0.0	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4735266) - continued									
ES2242794-010	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	184	186	0.7	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4735271)									
ES2243002-007	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	19	19	0.0	0% - 50%
ES2242982-009	SBT_CM_1020_S	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	364	365	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4735267)									
ES2242794-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	43	44	0.0	0% - 20%
ES2242794-010	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	254	254	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4735272)									
ES2242982-009	SBT_CM_1020_S	ED045G: Chloride	16887-00-6	1	mg/L	922	905	1.8	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4734970)									
ES2242982-001	SBT_GW_1019R_S	ED093F: Calcium	7440-70-2	1	mg/L	401	436	8.3	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	922	927	0.6	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4500	4650	3.4	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	17	17	0.0	0% - 50%
EW2205485-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	10	9	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	3	3	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	14	17	19.5	0% - 50%
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4734968)									
ES2242982-001	SBT_GW_1019R_S	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.027	0.028	0.0	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	1.15	1.17	1.2	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.013	0.013	0.0	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	4.96	5.02	1.2	0% - 20%
EW2205485-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.214	0.206	4.1	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4734968) - continued									
EW2205485-001	Anonymous	EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.08	<0.05	50.6	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4738157)									
ES2242808-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.005	0.006	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.06	0.06	0.0	No Limit
ES2243002-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.120	0.121	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4735731)									
ES2242977-005	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0004	0.0004	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.036	0.036	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	2.04	2.04	0.1	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.370	0.373	0.8	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.07	0.07	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2242982-010	SBT_CM_1020_M	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.012	0.011	0.0	0% - 50%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4735731) - continued									
ES2242982-010	SBT_CM_1020_M	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.030	0.030	0.0	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.011	0.010	0.0	0% - 50%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.533	0.519	2.7	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.019	0.019	0.0	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.090	0.088	2.5	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	2.12	1.99	6.4	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	6.16	6.08	1.3	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4738128)									
ES2242629-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.009	0.009	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2243065-004	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.641	0.642	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.008	0.006	20.5	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.33	0.32	0.0	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.54	0.54	0.0	0% - 50%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4734969)									
ES2242982-002	SBT_GW_1019R_M	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2242982-010	SBT_CM_1020_M	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4738156)									
ES2242792-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit
ES2242808-017	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4738145)									
ES2242407-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	0.0001	0.0001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4738145) - continued									
ES2242912-038	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4736034)									
ES2242725-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.10	<0.10	0.0	No Limit
ES2242725-010	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4736036)									
ES2242982-009	SBT_CM_1020_S	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.10	<0.10	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4738984)									
ES2242913-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	34.9	34.5	1.2	0% - 20%
ES2242913-010	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4738987)									
ES2242982-006	MW1_D	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	2.82	2.75	2.3	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4735269)									
ES2242954-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2242982-009	SBT_CM_1020_S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4738985)									
ES2242913-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.13	0.13	0.0	0% - 50%
ES2242913-010	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.78	2.77	0.0	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4738986)									
ES2242982-006	MW1_D	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.28	0.28	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4738991)									
ES2242917-006	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	46.4	45.8	1.3	0% - 20%
ES2242982-002	SBT_GW_1019R_M	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.0	2.0	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4738990)									
ES2242917-006	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	7.26	6.43	12.2	0% - 20%
ES2242982-002	SBT_GW_1019R_M	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.42	0.38	8.5	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4735268)									
ES2242794-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2242794-010	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4735273)									
ES2242982-009	SBT_CM_1020_S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4733720)									
ES2242950-003	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	286	297	3.7	0% - 20%
ES2242982-009	SBT_CM_1020_S	EP005: Total Organic Carbon	----	1	mg/L	5	4	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4739979)									
ES2242862-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4739979) - continued									
ES2242862-001	Anonymous	EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4739979)									
ES2242862-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4739979)									
ES2242862-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4739979)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074D: Fumigants (QC Lot: 4739979) - continued									
ES2242862-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4739979)									
ES2242862-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4739979) - continued									
ES2242982-011	SBT_CM_1020_D	EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4739979)									
ES2242862-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4739979)									
ES2242862-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074G: Trihalomethanes (QC Lot: 4739979) - continued									
ES2242862-001	Anonymous	EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4739978)									
ES2242862-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4739978)									
ES2242862-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4739978)									
ES2242862-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2242982-011	SBT_CM_1020_D	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4734289)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	76.8	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	71.9	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	82.8	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4734289)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	71.1	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	90.1	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	83.4	61.5	121
EA005P: pH by PC Titrator (QCLot: 4735552)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	101	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4735551)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	92.3	89.9	110
				<1	2100 µS/cm	96.2	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4734934)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	92.3	87.0	109
				<10	293 mg/L	103	75.2	126
				<10	2340 mg/L	104	83.0	124
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4734935)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	100	87.0	109
				<10	293 mg/L	100	75.2	126
				<10	2340 mg/L	98.8	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4735550)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	96.9	81.0	111
				----	50 mg/L	108	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4735266)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	98.4	82.0	122
				<1	500 mg/L	103	82.0	122
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4735271)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	96.7	82.0	122
				<1	500 mg/L	104	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4735267)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	101	80.9	127
				<1	1000 mg/L	104	80.9	127

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
ED045G: Chloride by Discrete Analyser (QCLot: 4735272)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	99.4	80.9	127
				<1	1000 mg/L	103	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4734970)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	97.2	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	98.0	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	95.8	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	96.6	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4734968)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	90.9	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.6	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.5	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.0	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	93.3	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.5	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.2	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.7	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.3	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.2	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	91.2	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4738157)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.5	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.7	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	96.4	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.7	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	97.5	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.1	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.9	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.4	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.4	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	98.0	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.9	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4735731)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	95.7	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.3	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.1	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.7	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	97.0	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.0	83.0	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4735731) - continued								
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.9	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	97.6	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	86.1	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.6	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	96.0	85.0	117
EG020T: Total Metals by ICP-MS (QCLot: 4738128)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	91.2	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.4	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.8	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.4	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	95.6	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.0	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	94.2	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	89.7	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.2	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	90.9	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	108	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4734969)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.6	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4738156)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	87.8	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4738145)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	88.2	77.0	111
EG050F: Dissolved Hexavalent Chromium (QCLot: 4736034)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	103	86.0	112
EG050F: Dissolved Hexavalent Chromium (QCLot: 4736036)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	99.5	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4738984)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	97.4	90.0	114
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4738987)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	99.3	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4735269)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	103	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4738985)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	103	91.0	113
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4738986)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	103	91.0	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4738991)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	91.9	69.0	101
				<0.1	1 mg/L	101	70.0	118
				<0.1	5 mg/L	94.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4738990)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	102	71.3	126
				<0.01	0.442 mg/L	108	71.3	126
				<0.01	1 mg/L	110	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4735268)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	106	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4735273)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	105	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4733720)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	96.2	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4734290)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	81.8	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	76.8	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	87.6	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	86.6	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	92.4	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	87.0	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	87.9	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.3	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	91.9	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	93.2	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	93.3	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	87.3	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.0	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	96.5	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	102	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	90.2	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	87.2	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	84.8	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	98.4	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	97.0	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	105	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4734290)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	80.0	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	92.7	63.7	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4734290) - continued								
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.4	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	83.6	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	86.6	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	85.4	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	85.6	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	90.4	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	85.5	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	91.6	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	85.2	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	83.5	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	98.0	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	96.7	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	98.6	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	90.9	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	84.7	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	88.4	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	97.4	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4734289)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4734289)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4739979)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	97.7	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	99.0	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	97.9	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	97.5	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	96.0	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	98.7	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	98.0	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	97.6	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	98.2	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	98.8	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	98.3	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	98.2	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	98.8	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	98.4	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4739979)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074B: Oxygenated Compounds (QCLot: 4739979) - continued								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	104	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	91.1	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	99.9	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	92.1	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4739979)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	91.5	72.8	127
EP074D: Fumigants (QCLot: 4739979)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	96.6	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	99.7	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	96.8	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	98.5	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	99.0	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4739979)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	90.8	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	93.8	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	93.5	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	97.7	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	96.9	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	94.4	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	98.4	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	89.2	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	97.0	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	96.3	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	97.9	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	96.2	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	96.0	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	93.9	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	101	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	95.6	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	100	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	99.7	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	99.5	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	90.8	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	97.4	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	98.4	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	99.8	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	103	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	104	74.0	126

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4739979) - continued								
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	105	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	104	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4739979)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	99.2	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	99.9	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	99.4	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	98.3	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	101	67.0	123
EP074G: Trihalomethanes (QCLot: 4739979)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	98.9	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	96.7	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	96.9	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	97.0	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4734287)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	68.0	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	74.5	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	74.1	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	75.3	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	82.6	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	80.6	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	67.7	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	70.4	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	66.6	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	71.4	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	68.1	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	75.8	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	73.9	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	66.9	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	70.5	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	67.2	59.1	118
EP075A: Phenolic Compounds (QCLot: 4734286)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	28.4	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	56.9	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	50.1	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	50.9	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	65.9	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	65.4	50.0	94.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075A: Phenolic Compounds (QCLot: 4734286) - continued								
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	66.2	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	70.6	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	67.3	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	70.7	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	72.1	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	63.3	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4734286)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	68.9	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	68.8	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	73.3	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	71.3	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	72.2	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	78.4	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	81.7	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	81.7	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	81.9	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	81.1	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	79.2	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	81.5	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	83.3	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	75.7	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	97.4	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	73.6	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	80.6	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	65.4	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	66.1	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	63.2	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4734286)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	78.9	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	93.2	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	87.7	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	81.1	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	91.8	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	78.2	62.1	115
EP075D: Nitrosamines (QCLot: 4734286)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	# 44.0	46.0	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075D: Nitrosamines (QCLot: 4734286) - continued								
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	# 56.6	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	52.6	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	49.4	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	67.5	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	64.2	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	97.5	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	80.3	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	# 21.8	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4734286)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	# 36.6	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	69.3	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	88.4	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	67.7	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	77.4	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	80.3	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	84.1	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	60.0	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	81.0	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	73.6	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	68.6	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	77.4	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	68.9	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	81.9	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	87.4	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	80.3	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	93.3	57.7	110
EP075F: Haloethers (QCLot: 4734286)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	# 54.7	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	# 64.6	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	81.3	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	85.7	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4734286)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	60.1	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	58.6	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	61.4	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	64.1	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	66.4	46.0	96.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075G: Chlorinated Hydrocarbons (QCLot: 4734286) - continued								
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	67.7	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	70.9	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	59.6	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	82.6	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	86.3	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4734286)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	54.6	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	66.0	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	72.1	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	73.5	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	75.3	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	74.6	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	80.3	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	79.3	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4734286)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	83.6	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	75.0	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	84.2	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	87.0	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	89.7	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	93.0	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	98.1	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	86.8	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	85.5	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	90.8	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	93.7	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	83.2	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	89.3	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	94.9	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	79.9	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4734286)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	73.9	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	74.1	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	87.9	49.0	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075J: Organophosphorus Pesticides (QCLot: 4734286) - continued								
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	96.0	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	92.4	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	97.6	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	87.0	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	89.9	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	87.4	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	83.2	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	92.0	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4734288)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	75.8	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	81.7	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	90.1	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4739978)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	520 µg/L	89.0	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4734288)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	77.3	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	90.0	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	97.7	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4739978)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	620 µg/L	92.4	75.0	127
EP080: BTEXN (QCLot: 4739978)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.7	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	99.4	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	106	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	105	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	107	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	108	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4734606)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	82.0	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	84.8	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	83.6	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4734606)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	79.7	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	90.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	90.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.0	71.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4734606)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	86.0	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	89.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	85.6	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4735266)							
ES2242794-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	81.7	70.0	130
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4735271)							
ES2242982-009	SBT_CM_1020_S	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4735267)							
ES2242794-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	106	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4735272)							
ES2242982-009	SBT_CM_1020_S	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4734968)							
ES2242982-004	MW1_S	EG020A-F: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	95.6	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	90.1	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	108	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	98.8	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	99.1	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	92.3	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	94.1	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	99.5	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4738157)							
ES2242808-007	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	92.9	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	97.4	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	98.2	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	96.1	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4738157) - continued							
ES2242808-007	Anonymous	EG020A-F: Copper	7440-50-8	1 mg/L	96.3	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	96.4	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	98.4	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	96.2	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	96.2	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4735731)							
ES2242982-001	SBT_GW_1019R_S	EG020A-T: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	93.7	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	90.7	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	102	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	91.1	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	96.9	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	99.5	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.8	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	87.4	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4738128)							
ES2242982-012	RB_281122_JF	EG020A-T: Arsenic	7440-38-2	1 mg/L	96.3	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	95.3	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	94.0	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	108	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	96.3	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	106	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.8	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	93.4	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	92.0	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4734969)							
ES2242982-003	SBT_GW_1019R_D	EG035F: Mercury	7439-97-6	0.01 mg/L	88.2	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4738156)							
ES2242792-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	86.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4738145)							
ES2242824-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	88.8	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4736034)							
ES2242725-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	# Not Determined	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4738984)							
ES2242913-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4738987)							
ES2242982-006	MW1_D	EK055G: Ammonia as N	7664-41-7	1 mg/L	128	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4735269)							
ES2242954-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	101	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4738985)							
ES2242913-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	106	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4738986)							
ES2242982-006	MW1_D	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	109	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4738991)							
ES2242917-008	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	# Not Determined	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4738990)							
ES2242917-008	Anonymous	EK067G: Total Phosphorus as P	----	10 mg/L	111	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4735268)							
ES2242794-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	95.6	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4735273)							
ES2242982-009	SBT_CM_1020_S	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	95.5	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4733720)							
ES2242965-001	Anonymous	EP005: Total Organic Carbon	----	200 mg/L	104	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4739979)							
ES2242862-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	115	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	116	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4739979)							
ES2242862-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	114	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	114	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4739979)							
ES2242862-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	115	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4739978)							
ES2242862-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	110	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4739978)							
ES2242862-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	113	70.0	130
EP080: BTEXN (QCLot: 4739978)							
ES2242862-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	106	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	108	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	120	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 4739978) - continued							
ES2242862-001	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	118	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	118	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	112	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2242982**	Page	: 1 of 21
Amendment	: **1**		
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 28-Nov-2022
Site	:	Issue Date	: 08-Dec-2022
Sampler	: JACK FLANAGAN	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 13

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075D: Nitrosamines	QC-4734286-002	----	**N-Nitrosomethylethylamine**	10595-95-6	44.0 %	46.0-110%	**Recovery less than lower control limit**
EP075D: Nitrosamines	QC-4734286-002	----	**N-Nitrosodiethylamine**	55-18-5	56.6 %	60.6-113%	**Recovery less than lower control limit**
EP075D: Nitrosamines	QC-4734286-002	----	**Methapyrilene**	91-80-5	21.8 %	23.3-125%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4734286-002	----	**2-Picoline**	109-06-8	36.6 %	41.0-109%	**Recovery less than lower control limit**
EP075F: Haloethers	QC-4734286-002	----	**Bis(2-chloroethyl) ether**	111-44-4	54.7 %	69.1-112%	**Recovery less than lower control limit**
EP075F: Haloethers	QC-4734286-002	----	**Bis(2-chloroethoxy) methane**	111-91-1	64.6 %	66.2-111%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2242982--009	SBT_CM_1020_S	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2242982--009	SBT_CM_1020_S	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK055G: Ammonia as N by Discrete Analyser	ES2242913--001	Anonymous	**Ammonia as N**	7664-41-7	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	ES2242917--008	Anonymous	**Total Kjeldahl Nitrogen as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2242982-005	MW1_M	**Dibromo-DDE**	21655-73-2	60.5 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2242982-005	MW1_M	**DEF**	78-48-8	64.9 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA005P: pH by PC Titrator						

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA005P: pH by PC Titrator - Analysis Holding Time Compliance						
Clear Plastic Bottle - Natural						
SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	----	----	----	29-Nov-2022	28-Nov-2022	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Hexavalent Chromium by Discrete Analyser - Dissolved	1	23	4.35	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	28-Nov-2022	×
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SMGW_GW02_D,							
SBT_CM_1020_S,	SBT_CM_1020_M,							
SBT_CM_1020_D								
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	26-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SMGW_GW02_D,							
SBT_CM_1020_S,	SBT_CM_1020_M,							
SBT_CM_1020_D								
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	05-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SMGW_GW02_D,							
SBT_CM_1020_S,	SBT_CM_1020_M,							
SBT_CM_1020_D								
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	12-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SMGW_GW02_D,							
SBT_CM_1020_S,	SBT_CM_1020_M,							
SBT_CM_1020_D								
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	26-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SMGW_GW02_D,							
SBT_CM_1020_S,	SBT_CM_1020_M,							
SBT_CM_1020_D								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	26-Dec-2022	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	26-Dec-2022	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	27-May-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-F) TB_281122_JF	**28-Nov-2022**	**----**	----	----	**30-Nov-2022**	27-May-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**29-Nov-2022**	27-May-2023	✓	**29-Nov-2022**	27-May-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) RB_281122_JF	**28-Nov-2022**	**30-Nov-2022**	27-May-2023	✓	**30-Nov-2022**	27-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**30-Nov-2022**	26-Dec-2022	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035F) TB_281122_JF	**28-Nov-2022**	**----**	----	----	**01-Dec-2022**	12-Dec-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) RB_281122_JF	**28-Nov-2022**	**----**	----	----	**01-Dec-2022**	26-Dec-2022	✓
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050G-F) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	26-Dec-2022	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**30-Nov-2022**	26-Dec-2022	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	30-Nov-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**30-Nov-2022**	26-Dec-2022	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**30-Nov-2022**	26-Dec-2022	✓	**30-Nov-2022**	26-Dec-2022	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**30-Nov-2022**	26-Dec-2022	✓	**30-Nov-2022**	26-Dec-2022	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	30-Nov-2022	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**----**	----	----	**29-Nov-2022**	26-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**01-Dec-2022**	09-Jan-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**01-Dec-2022**	09-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SMGW_GW02_D,							
SBT_CM_1020_S,	SBT_CM_1020_M,							
SBT_CM_1020_D								
EP074A: Monocyclic Aromatic Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP074B: Oxygenated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP074C: Sulfonated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP074G: Trihalomethanes								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**01-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D							
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**01-Dec-2022**	09-Jan-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SMGW_GW02_D,							
SBT_CM_1020_S,	SBT_CM_1020_M,							
SBT_CM_1020_D,	RB_281122_JF,							
TB_281122_JF								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SMGW_GW02_D,							
SBT_CM_1020_S,	SBT_CM_1020_M,							
SBT_CM_1020_D,	RB_281122_JF,							
TB_281122_JF								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D, RB_281122_JF, TB_281122_JF	**28-Nov-2022**	**30-Nov-2022**	05-Dec-2022	✓	**01-Dec-2022**	09-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D, RB_281122_JF, TB_281122_JF	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SMGW_GW02_D, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D, RB_281122_JF, TB_281122_JF	**28-Nov-2022**	**02-Dec-2022**	12-Dec-2022	✓	**05-Dec-2022**	12-Dec-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D, RB_281122_JF, TB_281122_JF	**28-Nov-2022**	**29-Nov-2022**	27-May-2023	✓	**06-Dec-2022**	27-May-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) SBT_GW_1019R_S, SBT_GW_1019R_M, SBT_GW_1019R_D, MW1_S, MW1_M, MW1_D, SMGW_GW02_S, SBT_CM_1020_S, SBT_CM_1020_M, SBT_CM_1020_D, RB_281122_JF, TB_281122_JF	**28-Nov-2022**	**29-Nov-2022**	27-May-2023	✓	**06-Dec-2022**	27-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**29-Nov-2022**	27-May-2023	✓	**06-Dec-2022**	27-May-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D,							
RB_281122_JF,	TB_281122_JF							
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT_GW_1019R_S,	SBT_GW_1019R_M,	**28-Nov-2022**	**29-Nov-2022**	27-May-2023	✓	**06-Dec-2022**	27-May-2023	✓
SBT_GW_1019R_D,	MW1_S,							
MW1_M,	MW1_D,							
SMGW_GW02_S,	SBT_CM_1020_S,							
SBT_CM_1020_M,	SBT_CM_1020_D,							
RB_281122_JF,	TB_281122_JF							

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	3	26	11.54	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	3	29	10.34	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	28	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	30	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	38	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	3	23	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	3	29	10.34	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	10	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	26	11.54	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	10	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	11	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	29	13.79	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	28	10.71	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	38	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Major Cations - Dissolved	ED093F	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	36	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	39	**15.38**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	28	**3.57**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	23	**4.35**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	10	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	10	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens

Invoices to:

~~Mobile~~ email: emma.stephens@tetratech.com Email: jack.flanagan@tetratech.c

~~Phone~~ email: casey.ofarred@tetratech.com Email: esdat-labreports@coffey.com

Project No: 292575-4 Task No:

Project Name: WSA - SBT Laboratory: ALS

Sampler's Name: Jack Fanagan Project Manager: Emma Stephens

Quote number (if different to current quoted prices): S4/373/22 V2

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring Suite	Baseline monitoring Rinsate blank extended suite	Baseline monitoring trip blank extended suite	NOTES
1	SBT-GW-1019R_S	28/11/22	AM	W	3V, 1A, 7P	STD	X			
2	SBT-GW-1019R_M									
3	SBT-GW-1019R_D									
4	MW1_S									
5	MW1_M									
6	MW1_D									
7	SMGW-GW02_S									
8	SMGW-GW02_D									
9	SPT-CM-1020_S		PM							
10	SPT-CM-1020-M									
11	SPT-CM-1020-D									
12	RB-281122-JF				2V, 1A, 3P			X		
13	TB-281122-JF				2V				X	

Environmental Division
Sydney
Work Order Reference
ES2242982

Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Ellie W.	Date: 28/11/22	Name: LG	Date: 28/11/22
Coffey	Time:	Company: AU	Time: 1650
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2243165**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 29-Nov-2022 17:54
Order number	: ----	Date Analysis Commenced	: 29-Nov-2022
C-O-C number	: ----	Issue Date	: 07-Dec-2022 16:59
Sampler	: Jack Flanagan		
Site	: ----		
Quote number	: SY/373/22		
No. of samples received	: 5		
No. of samples analysed	: 5		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: LORs have been raised for some samples due to matrix interference (High sample salinity)
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	----	----	7.93	5.83	6.48
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	10100	12300	36800
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	----	----	6290	7130	26600
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	352	7	32
Total Alkalinity as CaCO3	----	1	mg/L	----	----	352	7	32
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	719	201	772
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	----	3030	4310	12800
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	----	108	8	110
Magnesium	7439-95-4	1	mg/L	----	----	238	216	1350
Sodium	7440-23-5	1	mg/L	----	----	1690	2090	5880
Potassium	7440-09-7	1	mg/L	----	----	13	5	16
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	----	<0.01	1.01	0.27
Arsenic	7440-38-2	0.001	mg/L	----	----	0.003	<0.001	<0.010
Cadmium	7440-43-9	0.0001	mg/L	----	----	<0.0001	0.0005	0.0027
Chromium	7440-47-3	0.001	mg/L	----	----	<0.001	<0.001	<0.010
Cobalt	7440-48-4	0.001	mg/L	----	----	0.005	0.101	0.565
Copper	7440-50-8	0.001	mg/L	----	----	<0.001	0.002	<0.010
Lead	7439-92-1	0.001	mg/L	----	----	<0.001	<0.001	<0.010
Manganese	7439-96-5	0.001	mg/L	----	----	0.526	0.170	8.80
Nickel	7440-02-0	0.001	mg/L	----	----	0.002	0.066	0.334
Zinc	7440-66-6	0.005	mg/L	----	----	<0.005	0.154	0.676
Iron	7439-89-6	0.05	mg/L	----	----	1.21	20.1	<0.10
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	----	0.36	1.26	2.42
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	----	----	**0.006**	**0.102**	**0.610**
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
Manganese	7439-96-5	0.001	mg/L	----	----	**0.575**	**0.184**	**9.62**
Iron	7439-89-6	0.05	mg/L	----	----	**1.76**	**25.0**	**2.48**
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	----	----	<0.01	<0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	----	----	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	----	----	**0.50**	**0.23**	**0.69**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	----	----	<0.01	<0.01	**0.03**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	----	----	<0.01	<0.01	**0.93**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	<0.01	<0.01	**0.96**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	----	**1.0**	**0.7**	**3.0**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	----	**1.0**	**0.7**	**4.0**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	----	**0.10**	**0.04**	**0.91**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	----	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	----	107	126	378
ø Total Cations	----	0.01	meq/L	----	----	98.8	109	373
ø Ionic Balance	----	0.01	%	----	----	4.20	7.10	0.67
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	----	----	6	11	2
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	<0.5	<0.5	<0.5
beta-BHC	319-85-7	0.5	µg/L	----	----	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	----	----	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	----	----	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	----	----	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	----	----	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	----	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	----	----	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	----	----	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	----	----	<2.0	<2.0	<2.0
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	----	----	<0.5	<0.5	<0.5
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	----	----	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	----	----	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	----	----	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	----	----	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	----	----	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	----	----	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	----	----	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	----	----	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	----	----	<1	<1	<1
Toluene	108-88-3	2	µg/L	----	----	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	----	----	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	----	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	----	----	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	----	----	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	----	----	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	----	----	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	----	----	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	----	----	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	----	----	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	----	----	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	----	----	<5	<5	<5
n-Butylbenzene	104-51-8	5	µg/L	----	----	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	----	----	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	----	----	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	----	----	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	----	----	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	----	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	----	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	----	----	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	----	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	----	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	----	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	----	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	----	----	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	----	----	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	----	----	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	----	----	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	----	----	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	----	----	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	----	----	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	----	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	----	----	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	----	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	----	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	----	----	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	----	----	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	----	----	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	----	----	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	----	----	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	----	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	----	----	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	----	----	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	----	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	----	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	----	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	----	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	----	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	----	----	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	----	----	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	----	----	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	----	----	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	----	----	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	----	----	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	----	----	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	----	----	**9**	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	----	----	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	----	----	<5	<5	<5
Bromoform	75-25-2	5	µg/L	----	----	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	----	----	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	----	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	----	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	----	----	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	----	----	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	----	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	----	----	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	----	----	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	----	----	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	----	----	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	----	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	----	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	----	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	----	----	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	----	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	----	----	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	----	----	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	----	----	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	----	----	<2	<2	<2
Fluorene	86-73-7	2	µg/L	----	----	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	----	----	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	----	----	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	----	----	<2	<2	<2
Pyrene	129-00-0	2	µg/L	----	----	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	----	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	----	----	<2	<2	<2
Chrysene	218-01-9	2	µg/L	----	----	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	----	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	----	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	----	----	<2	<2	<2
3-Methylcholanthrene	56-49-5	2	µg/L	----	----	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	----	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	----	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	----	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	----	----	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	----	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	----	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	----	----	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	----	----	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	----	----	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	----	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	----	----	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	----	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	----	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	----	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	----	----	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	----	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	----	----	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	----	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	----	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	----	----	<2	<2	<2
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	----	----	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	----	----	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	----	----	<2	<2	<2
Isophorone	78-59-1	2	µg/L	----	----	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	----	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	----	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	----	----	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	----	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	----	<2	<2	<2
Azobenzene	103-33-3	2	µg/L	----	----	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	----	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	----	----	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	----	----	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	----	----	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	----	----	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	----	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	----	----	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	----	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	----	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	----	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	----	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	----	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	----	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	----	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	----	----	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	----	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	----	----	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	----	----	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	----	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	----	----	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	----	<4	<4	<4
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	----	----	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	----	----	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	----	----	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	----	----	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	----	----	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	----	----	<2	<2	<2
Carbazole	86-74-8	2	µg/L	----	----	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	----	<2	<2	<2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	----	----	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	----	----	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	----	----	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	----	----	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	----	----	<2	<2	<2
Aldrin	309-00-2	2	µg/L	----	----	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	----	----	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	----	----	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	----	----	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	----	----	<2	<2	<2
Endrin	72-20-8	2	µg/L	----	----	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	----	----	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	----	----	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	----	----	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	----	----	<4	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	----	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	----	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	----	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	----	----	<2	<2	<2
Diazinon	333-41-5	2	µg/L	----	----	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	----	<2	<2	<2
Malathion	121-75-5	2	µg/L	----	----	<2	<2	<2
Fenthion	55-38-9	2	µg/L	----	----	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	----	----	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	----	----	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	----	----	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	----	----	<2	<2	<2
Ethion	563-12-2	2	µg/L	----	----	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	----	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	----	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	----	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	----	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	----	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	----	----	75.4	68.0	81.4
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	----	----	68.2	61.0	71.1
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	----	----	111	91.6	111
Toluene-D8	2037-26-5	5	%	----	----	109	87.8	106
4-Bromofluorobenzene	460-00-4	5	%	----	----	108	88.6	107
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	----	----	22.1	18.0	22.8
2-Chlorophenol-D4	93951-73-6	1.0	%	----	----	41.8	37.2	42.9
2.4.6-Tribromophenol	118-79-6	1.0	%	----	----	52.8	55.3	53.9
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_29112_JF	TB_291122_JF	SBT_GW_1063	SBT_GW_1043	SBT_GW_1048
			Sampling date / time	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00	29-Nov-2022 13:00
Compound	CAS Number	LOR	Unit	ES2243165-001	ES2243165-002	ES2243165-003	ES2243165-004	ES2243165-005
				Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	----	----	67.8	62.2	68.0
Anthracene-d10	1719-06-8	1.0	%	----	----	76.2	69.0	76.8
4-Terphenyl-d14	1718-51-0	1.0	%	----	----	81.1	73.8	78.6
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	----	----	41.6	35.2	43.0
Phenol-d6	13127-88-3	2	%	----	----	30.0	25.8	31.6
2-Chlorophenol-D4	93951-73-6	2	%	----	----	53.5	47.1	55.6
2.4.6-Tribromophenol	118-79-6	2	%	----	----	53.3	47.9	51.4
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	----	----	64.7	61.0	65.5
1.2-Dichlorobenzene-D4	2199-69-1	2	%	----	----	51.6	46.9	51.5
2-Fluorobiphenyl	321-60-8	2	%	----	----	60.7	54.6	63.3
Anthracene-d10	1719-06-8	2	%	----	----	72.8	64.0	70.3
4-Terphenyl-d14	1718-51-0	2	%	----	----	77.9	70.4	74.1
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	95.8	73.7	111	91.9	111
Toluene-D8	2037-26-5	2	%	106	82.1	104	83.9	102
4-Bromofluorobenzene	460-00-4	2	%	102	83.0	106	82.6	103
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	110	94.1	105	102	105
13C8-PFOA	----	0.02	%	98.9	92.8	89.9	90.1	97.6

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2243165**	Page	: 1 of 25
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 29-Nov-2022
Order number	: ----	Date Analysis Commenced	: 29-Nov-2022
C-O-C number	: ----	Issue Date	: 07-Dec-2022
Sampler	: Jack Flanagan		
Site	: ----		
Quote number	: SY/373/22		
No. of samples received	: 5		
No. of samples analysed	: 5		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4736372)									
ES2243165-003	SBT_GW_1063	EA005-P: pH Value	----	0.01	pH Unit	7.93	8.02	1.1	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4736370)									
ES2243165-003	SBT_GW_1063	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	10100	10100	0.2	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4742901)									
ES2243033-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	8930	9210	3.1	0% - 20%
ES2243205-008	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1510	1480	1.5	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4736371)									
ES2243165-003	SBT_GW_1063	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	352	362	2.8	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	352	362	2.8	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4739913)									
ES2243165-005	SBT_GW_1048	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	772	765	0.9	0% - 20%
ES2243033-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<100	<100	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 4739914)									
ES2243280-011	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	24	24	0.0	0% - 20%
ES2243033-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	2920	2790	4.8	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4739587)									
EN2211550-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	100	99	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	374	374	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	2810	2780	1.1	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	16	16	0.0	0% - 50%
ES2242920-006	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
ED093F: Dissolved Major Cations (QC Lot: 4739587) - continued									
ES2242920-006	Anonymous	ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	44	44	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	39	40	2.6	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4739589)									
ES2243250-006	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	2	3	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	308	313	1.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	6	7	18.3	No Limit
ES2243373-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	9	9	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	6	6	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	18	18	0.0	0% - 50%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4739585)									
EN2211550-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.296	0.295	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	1.72	1.70	1.0	0% - 20%
ES2242920-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0014	0.0014	0.0	0% - 50%
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.102	0.099	2.6	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.138	0.129	6.2	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.19	0.18	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4739543)									
ES2243033-002	Anonymous	EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.45	0.51	11.9	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.60	0.71	17.9	0% - 50%
ES2243214-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4739543) - continued									
ES2243214-001	Anonymous	EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.010	0.012	20.2	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.658	0.653	0.8	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.035	0.037	4.2	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.66	0.76	13.9	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	3.49	3.62	3.6	0% - 20%
ES2243033-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.022	0.021	0.0	0% - 20%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.011	0.010	15.7	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.020	0.019	0.0	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.632	0.546	14.6	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.014	0.013	0.0	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.019	0.019	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4739586)									
EN2211550-005	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2242920-006	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4739565)									
ES2243038-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2243252-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	0.0008	0.0008	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4745636)									
ES2243033-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.10	<0.10	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4742553)									
ES2243006-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2243165-005	SBT_GW_1048	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.69	0.71	2.9	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4739911)									
ES2243280-011	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.0	No Limit
ES2243033-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.10	<0.10	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4742555)									
ES2243188-004	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.01	84.8	No Limit
ES2243165-005	SBT_GW_1048	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.96	0.96	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4742552)									
ES2243155-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	76.6	73.2	4.6	0% - 20%
ES2243188-005	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.9	0.8	12.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4742551)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4742551) - continued									
ES2243155-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	8.89	8.14	8.7	0% - 20%
ES2243188-005	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.08	0.07	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4739912)									
ES2243033-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	12.7	12.6	1.2	0% - 50%
EP005: Total Organic Carbon (TOC) (QC Lot: 4736474)									
ES2241223-004	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	36	32	10.0	0% - 20%
ES2243067-005	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	14	14	0.0	0% - 50%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4745552)									
ES2243165-003	SBT_GW_1063	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2243205-006	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4745552)									
ES2243165-003	SBT_GW_1063	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074B: Oxygenated Compounds (QC Lot: 4745552) - continued									
ES2243165-003	SBT_GW_1063	EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2243205-006	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4745552)									
ES2243165-003	SBT_GW_1063	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2243205-006	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4745552)									
ES2243165-003	SBT_GW_1063	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2243205-006	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4745552)									
ES2243165-003	SBT_GW_1063	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4745552) - continued									
ES2243165-003	SBT_GW_1063	EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2243205-006	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4745552)									
ES2243165-003	SBT_GW_1063	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074F: Halogenated Aromatic Compounds (QC Lot: 4745552) - continued									
ES2243165-003	SBT_GW_1063	EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2243205-006	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4745552)									
ES2243165-003	SBT_GW_1063	EP074: Chloroform	67-66-3	5	µg/L	9	9	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2243205-006	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4745145)									
ES2243544-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
WN2215130-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<0.02 mg/L	<20	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4745553)									
ES2243165-003	SBT_GW_1063	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2243205-006	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4745554)									
ES2243058-006	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<0.02 mg/L	<20	0.0	No Limit
ES2243271-003	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4745145)									
ES2243544-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
WN2215130-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<0.02 mg/L	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4745553)									
ES2243165-003	SBT_GW_1063	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2243205-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4745554)									
ES2243058-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<0.02 mg/L	<20	0.0	No Limit
ES2243271-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4745145)									
ES2243544-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP080: BTEXN (QC Lot: 4745145) - continued									
ES2243544-001	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
WN2215130-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<0.001 mg/L	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<0.005 mg/L	<5	0.0	No Limit
EP080: BTEXN (QC Lot: 4745553)									
ES2243165-003	SBT_GW_1063	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2243205-006	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP080: BTEXN (QC Lot: 4745554)									
ES2243058-006	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<0.001 mg/L	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<0.005 mg/L	<5	0.0	No Limit
ES2243271-003	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 4745554) - continued									
ES2243271-003	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4739533)									
EP2215715-011	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.18	0.16	11.1	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.34	0.31	9.1	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP2215722-009	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4739533)									
EP2215715-011	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.90	0.82	9.5	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.82	0.77	6.1	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.23	0.21	9.0	0% - 50%
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.0	No Limit
EP2215722-009	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4739533)									
EP2215715-011	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP2215722-009	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4737379)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	74.9	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	79.4	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	64.5	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4737379)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	69.8	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	69.8	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	72.2	61.5	121
EA005P: pH by PC Titrator (QCLot: 4736372)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4736370)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	97.6	89.9	110
				<1	2100 µS/cm	99.8	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4742901)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	91.5	87.0	109
				<10	293 mg/L	95.7	75.2	126
				<10	2340 mg/L	91.7	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4736371)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	93.6	81.0	111
				----	50 mg/L	114	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4739913)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	95.6	82.0	122
				<1	500 mg/L	102	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4739914)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	99.6	80.9	127
				<1	1000 mg/L	101	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4739587)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	104	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	99.7	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	100	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	101	85.0	113
ED093F: Dissolved Major Cations (QCLot: 4739589)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	104	80.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED093F: Dissolved Major Cations (QCLot: 4739589) - continued								
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	98.6	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	98.6	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	99.7	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4739585)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	94.0	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	93.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.5	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.7	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.5	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.9	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.4	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.1	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.8	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	91.5	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	93.1	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4739543)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	95.9	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.0	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.4	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.0	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.8	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.0	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.3	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.0	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.3	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.6	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	96.5	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4739586)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.8	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4739565)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.9	77.0	111
EG050F: Dissolved Hexavalent Chromium (QCLot: 4745636)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	100	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4742553)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	103	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4739911)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4742555)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4742555) - continued								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	106	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4742552)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	87.7	69.0	101
				<0.1	1 mg/L	94.6	70.0	118
				<0.1	5 mg/L	91.2	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4742551)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	99.5	71.3	126
				<0.01	0.442 mg/L	104	71.3	126
				<0.01	1 mg/L	108	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4739912)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	100	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4736474)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	95.6	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4737380)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	79.9	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	77.1	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	84.1	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	86.2	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	94.7	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	97.7	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	95.8	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	100	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	94.9	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	99.8	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	95.8	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	90.0	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.5	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	107	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	92.2	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	96.0	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	102	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	93.3	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	88.0	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	104	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	81.4	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4737380)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	106	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	89.9	63.7	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4737380) - continued								
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	25.7	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	77.8	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	86.3	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	99.1	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	99.2	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	94.4	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	95.2	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	103	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	90.6	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	95.6	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	89.9	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	90.8	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	93.0	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	96.1	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	90.7	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	95.9	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	62.9	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4737379)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4737379)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4745552)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	106	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	109	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	108	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	108	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	110	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	110	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	105	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	104	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	104	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	104	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	103	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	102	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	110	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	104	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4745552)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074B: Oxygenated Compounds (QCLot: 4745552) - continued								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	101	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	116	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	112	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	112	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4745552)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	107	72.8	127
EP074D: Fumigants (QCLot: 4745552)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	104	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	106	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	107	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	105	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	113	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4745552)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	89.6	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	86.7	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	96.7	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	88.0	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	87.3	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	112	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	102	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	115	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	105	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	109	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	108	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	107	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	104	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	101	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	114	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	106	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	112	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	110	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	112	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	119	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	111	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	111	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	116	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	119	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	101	74.0	126

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4745552) - continued								
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	93.7	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	117	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4745552)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	111	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	110	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	107	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	106	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	122	67.0	123
EP074G: Trihalomethanes (QCLot: 4745552)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	107	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	104	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	107	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	115	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4737376)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	72.8	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	66.9	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	67.2	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	67.6	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	81.0	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	80.3	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	66.4	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	67.2	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	66.6	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	75.4	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	73.7	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	74.5	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	81.8	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	71.7	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	73.3	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	71.9	59.1	118
EP075A: Phenolic Compounds (QCLot: 4737378)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	33.8	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	62.4	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	57.2	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	55.8	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	69.5	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	70.1	50.0	94.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075A: Phenolic Compounds (QCLot: 4737378) - continued								
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	72.0	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	66.2	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	70.6	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	73.8	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	77.6	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	81.7	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4737378)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	66.0	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	68.2	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	72.4	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	72.2	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	75.8	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	81.2	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	79.7	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	80.1	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	80.1	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	80.4	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	88.4	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	82.8	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	82.7	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	83.5	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	95.2	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	83.1	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	84.1	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	80.7	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	81.3	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	81.0	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4737378)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	75.9	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	91.0	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	86.6	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	84.0	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	91.9	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	85.6	62.1	115
EP075D: Nitrosamines (QCLot: 4737378)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	51.9	46.0	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075D: Nitrosamines (QCLot: 4737378) - continued								
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	63.0	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	57.1	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	54.7	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	74.9	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	72.2	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	# 109	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	81.6	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	24.6	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4737378)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	43.7	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	71.2	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	69.1	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	74.9	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	75.1	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	80.8	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	87.0	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	83.9	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	85.8	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	81.5	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	82.2	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	77.3	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	73.5	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	81.8	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	82.6	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	84.7	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	82.8	57.7	110
EP075F: Haloethers (QCLot: 4737378)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	69.6	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	72.0	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	80.3	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	81.4	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4737378)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	65.0	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	63.2	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	64.2	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	64.3	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	64.6	46.0	96.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075G: Chlorinated Hydrocarbons (QCLot: 4737378) - continued								
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	61.4	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	62.5	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	66.8	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	74.5	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	78.8	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4737378)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	61.5	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	67.7	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	72.2	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	76.7	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	79.0	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	80.0	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	84.3	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	80.1	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4737378)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	79.3	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	81.9	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	77.0	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	83.2	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	78.3	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	79.2	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	81.3	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	82.1	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	83.2	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	83.6	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	83.9	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	83.5	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	86.1	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	89.6	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	82.2	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4737378)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	75.6	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	83.6	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	79.8	49.0	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075J: Organophosphorus Pesticides (QCLot: 4737378) - continued								
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	83.9	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	93.0	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	81.4	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	86.5	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	84.9	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	83.4	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	83.4	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	86.8	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4737377)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	75.0	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	76.0	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	82.2	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4745145)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	85.3	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4745553)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	111	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4745554)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	83.0	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4737377)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	67.8	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	71.3	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	71.9	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4745145)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	88.8	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4745553)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	111	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4745554)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	85.4	75.0	127
EP080: BTEXN (QCLot: 4745145)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.7	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.5	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	97.7	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	92.8	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	95.3	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	103	70.0	120
EP080: BTEXN (QCLot: 4745553)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 4745553) - continued								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	106	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	104	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	103	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	102	70.0	120
EP080: BTEXN (QCLot: 4745554)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.9	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	92.4	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	91.9	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	87.7	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	88.6	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	96.0	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4739533)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	77.4	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	84.8	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	81.8	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4739533)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	91.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	86.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	90.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	84.4	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4739533)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	80.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	85.8	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	96.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	88.8	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4739913)							
ES2243033-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1000 mg/L	119	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4739914)							
ES2243033-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4739585)							
EN2211550-006	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	89.0	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	85.6	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	83.5	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	83.9	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	86.8	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	82.6	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	# Not Determined	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	79.3	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	80.9	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4739543)							
ES2243165-001	RB_29112_JF	EG020A-T: Arsenic	7440-38-2	1 mg/L	99.6	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	103	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	102	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	98.4	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	101	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	96.5	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	103	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	101	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.2	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4739586)							
EN2211550-004	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	89.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4739565)							
ES2243038-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	98.4	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4745636)							
ES2243033-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.5 mg/L	71.6	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4742553)							
ES2243006-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	108	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4739911)							
ES2243033-001	Anonymous	EK057G: Nitrite as N	14797-65-0	5 mg/L	98.2	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4742555)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4742555) - continued							
ES2243155-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	107	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4742552)							
ES2243155-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	# Not Determined	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4742551)							
ES2243155-002	Anonymous	EK067G: Total Phosphorus as P	----	5 mg/L	106	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4739912)							
ES2243033-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	# Not Determined	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4736474)							
ES2243005-001	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	115	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4745552)							
ES2243165-003	SBT_GW_1063	EP074: Benzene	71-43-2	25 µg/L	116	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	106	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4745552)							
ES2243165-003	SBT_GW_1063	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	78.6	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	104	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4745552)							
ES2243165-003	SBT_GW_1063	EP074: Chlorobenzene	108-90-7	25 µg/L	105	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4745145)							
ES2243544-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	105	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4745553)							
ES2243165-003	SBT_GW_1063	EP080: C6 - C9 Fraction	----	325 µg/L	106	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4745554)							
ES2243058-006	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	84.1	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4745145)							
ES2243544-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	107	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4745553)							
ES2243165-003	SBT_GW_1063	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	104	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4745554)							
ES2243058-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	85.2	70.0	130
EP080: BTEXN (QCLot: 4745145)							
ES2243544-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	101	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	110	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 4745145) - continued							
ES2243544-001	Anonymous	EP080: Ethylbenzene	100-41-4	25 µg/L	118	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	115	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	114	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	115	70.0	130
EP080: BTEXN (QCLot: 4745553)							
ES2243165-003	SBT_GW_1063	EP080: Benzene	71-43-2	25 µg/L	104	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	104	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	109	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	106	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	107	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	99.9	70.0	130
EP080: BTEXN (QCLot: 4745554)							
ES2243058-006	Anonymous	EP080: Benzene	71-43-2	25 µg/L	87.4	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	87.9	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	90.4	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	86.2	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	86.6	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	88.8	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4739533)							
EP2215715-012	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	88.4	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	125	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	# Not Determined	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4739533)							
EP2215715-012	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	115	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	123	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	122	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	118	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	103	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4739533)							
EP2215715-012	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	103	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	106	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	122	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	106	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2243165**	Page	: 1 of 15
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 29-Nov-2022
Site	: ----	Issue Date	: 07-Dec-2022
Sampler	: Jack Flanagan	No. of samples received	: 5
Order number	: ----	No. of samples analysed	: 5

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075D: Nitrosamines	QC-4737378-002	----	**N-Nitrosodibutylamine**	924-16-3	109 %	62.5-108%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
ED045G: Chloride by Discrete Analyser	ES2243033--001	Anonymous	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG020F: Dissolved Metals by ICP-MS	EN2211550--006	Anonymous	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	ES2243155--002	Anonymous	**Total Kjeldahl Nitrogen as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK071G: Reactive Phosphorus as P by discrete analyse	ES2243033--001	Anonymous	**Reactive Phosphorus as P**	14265-44-2	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EP2215715--012	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068T: Organophosphorus Pesticide Surrogate	ES2243165-004	SBT_GW_1043	**DEF**	78-48-8	61.0 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Matrix Spikes (MS) - Continued					
TRH - Semivolatile Fraction	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**29-Nov-2022**	29-Nov-2022	✓
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P)							
SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**29-Nov-2022**	27-Dec-2022	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**05-Dec-2022**	06-Dec-2022	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**29-Nov-2022**	13-Dec-2022	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**01-Dec-2022**	27-Dec-2022	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G)							
SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**01-Dec-2022**	27-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**01-Dec-2022**	27-Dec-2022	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**01-Dec-2022**	28-May-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) RB_29112_JF, TB_291122_JF, SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**01-Dec-2022**	28-May-2023	✓	**01-Dec-2022**	28-May-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**05-Dec-2022**	27-Dec-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) RB_29112_JF, TB_291122_JF	**29-Nov-2022**	**----**	----	----	**05-Dec-2022**	27-Dec-2022	✓
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050G-F) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**05-Dec-2022**	27-Dec-2022	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**05-Dec-2022**	27-Dec-2022	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**01-Dec-2022**	01-Dec-2022	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**05-Dec-2022**	27-Dec-2022	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**02-Dec-2022**	27-Dec-2022	✓	**05-Dec-2022**	27-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**02-Dec-2022**	27-Dec-2022	✓	**05-Dec-2022**	27-Dec-2022	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**01-Dec-2022**	01-Dec-2022	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**----**	----	----	**30-Nov-2022**	27-Dec-2022	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**02-Dec-2022**	09-Jan-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1048	SBT_GW_1043,	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1048	SBT_GW_1043,	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1048	SBT_GW_1043,	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1048	SBT_GW_1043,	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1048	SBT_GW_1043,	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1048	SBT_GW_1043,	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_1063, SBT_GW_1048	SBT_GW_1043,	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**07-Dec-2022**	09-Jan-2023	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071) RB_29112_JF, SBT_GW_1043,	SBT_GW_1063, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB_29112_JF		**29-Nov-2022**	**03-Dec-2022**	13-Dec-2022	✓	**05-Dec-2022**	13-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT_GW_1063, SBT_GW_1048	SBT_GW_1043,	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080) TB_291122_JF		**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**07-Dec-2022**	13-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) RB_29112_JF, SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**30-Nov-2022**	06-Dec-2022	✓	**05-Dec-2022**	09-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB_29112_JF	**29-Nov-2022**	**03-Dec-2022**	13-Dec-2022	✓	**05-Dec-2022**	13-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080) TB_291122_JF	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**07-Dec-2022**	13-Dec-2022	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) RB_29112_JF	**29-Nov-2022**	**03-Dec-2022**	13-Dec-2022	✓	**05-Dec-2022**	13-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**06-Dec-2022**	13-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080) TB_291122_JF	**29-Nov-2022**	**05-Dec-2022**	13-Dec-2022	✓	**07-Dec-2022**	13-Dec-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) RB_29112_JF, TB_291122_JF, SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**01-Dec-2022**	28-May-2023	✓	**05-Dec-2022**	28-May-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) RB_29112_JF, TB_291122_JF, SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**01-Dec-2022**	28-May-2023	✓	**05-Dec-2022**	28-May-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) RB_29112_JF, TB_291122_JF, SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**01-Dec-2022**	28-May-2023	✓	**05-Dec-2022**	28-May-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) RB_29112_JF, TB_291122_JF, SBT_GW_1063, SBT_GW_1043, SBT_GW_1048	**29-Nov-2022**	**01-Dec-2022**	28-May-2023	✓	**05-Dec-2022**	28-May-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	34	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	20	15.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	6	51	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	3	66.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	3	66.67	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Major Cations - Dissolved	ED093F	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	3	**66.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	14	**21.43**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	15	**20.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	51	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	3	**33.33**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	51	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	51	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens ~~Jessica Paulsen~~ Mobile: casey.ofarrel@tetratech.com Email: jack.flanagan@tetratech.com ~~jessica.paulsen@tetratech.com~~

Invoices to: general.admin@coffey.com Phone: emma.stephens@tetratech.com Email: esdat_lohreports@coffey.com

Project No: ~~754-SYDEN301982~~ 292575-4 Task No:

Project Name: ~~Sydney Kilns~~ WSA-SBT Laboratory: ~~Eurofins~~ ALS

Sampler's Name: Jack Flanagan Project Manager: Emma Stephens

Quote number (if different to current quoted prices): 54/373/22 V2

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Groundwater Baseline extended Suite	Groundwater Baseline Intensive	Groundwater Baseline Trip blank	NOTES
1	RB_291122_JF	29/11/22	1:00	Water	Bottles	STD		x	x	
2	TB_291122_JF							x		
3	SBT-GW-1063						x	x		
4	SBT-GW-1043						x	x		
5	SBT-GW-1048						x	x		

HT

Environmental Division Sydney
Work Order Reference
ES2243165
Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jack Flanagan	Date: 29/11/22	Name: JG	Date: 29/11/21
Coffey	Time:	Company: AU	Time: 1815
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No.

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2243342**	Page	: 1 of 42
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: Level 3, 101 Sussex Street Sydney	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE292575-4 WSA-SBT	Date Samples Received	: 30-Nov-2022 17:44
Order number	: ----	Date Analysis Commenced	: 02-Dec-2022
C-O-C number	: ----	Issue Date	: 08-Dec-2022 18:26
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK055G: LOR raised for Ammonia on sample 10 due to sample matrix.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EK057G/EK059G: It has been noted that Nitrite is greater than NOx on sample 2, however this difference is within the limits of experimental variation.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.44	7.48	7.16	7.15	7.49
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	26200	33800	27300	2510	27600
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	20600	25400	19700	1530	21100
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	801	944	393	239	1220
Total Alkalinity as CaCO3	----	1	mg/L	801	944	393	239	1220
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	686	1280	1440	156	1850
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	9290	11700	9100	615	9360
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	460	352	273	99	237
Magnesium	7439-95-4	1	mg/L	682	1050	862	10	1110
Sodium	7440-23-5	1	mg/L	4550	5690	4500	420	4620
Potassium	7440-09-7	1	mg/L	60	31	7	40	44
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	0.03	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.001	0.002	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	0.003	<0.001	<0.001	0.015	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.006	0.017	0.077	0.001	0.002
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	0.002	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	0.216	3.72	12.4	0.041	0.101
Nickel	7440-02-0	0.001	mg/L	0.008	0.012	0.021	0.001	0.002
Zinc	7440-66-6	0.005	mg/L	<0.005	0.007	0.079	0.006	0.006
Iron	7439-89-6	0.05	mg/L	0.77	0.13	3.29	0.14	<0.05
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	2.30	6.45	4.59	0.18	50.4
Cobalt	7440-48-4	0.001	mg/L	0.011	0.028	0.079	<0.001	0.092

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.269	4.02	10.9	0.047	3.03
Iron	7439-89-6	0.05	mg/L	3.61	22.7	10.2	0.23	140
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	0.02	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	5.16	1.38	0.82	0.90	0.17
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.02	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.02	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	6.0	3.3	1.9	1.2	8.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	6.0	3.3	1.9	1.2	8.5
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.20	0.57	0.37	0.05	3.74
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	292	376	294	25.4	327
ø Total Cations	----	0.01	meq/L	278	352	280	25.0	305
ø Ionic Balance	----	0.01	%	2.42	3.20	2.44	0.63	3.43
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	14	11	13	7	6
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	**5**	<5	<5	**7**	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	**8**	<5	<5	**6**	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	<0.02	<0.02	<0.02
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	----	<0.01	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	<0.01	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L	----	<0.10	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	<0.02	<0.02	<0.02
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	<0.01	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	**0.08**	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	**0.08**	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**58.6**	**67.4**	**82.3**	**74.4**	**64.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003-c	SBT-GW-3003-b	SBT-GW-3003-a	SBT-GW-3006-w	SBT-GW-3012-b
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-001	ES2243342-002	ES2243342-003	ES2243342-004	ES2243342-005
				Result	Result	Result	Result	Result
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	61.6	66.6	80.8	76.3	63.7
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	112	122	121	105	96.5
Toluene-D8	2037-26-5	5	%	109	123	119	110	94.4
4-Bromofluorobenzene	460-00-4	5	%	105	115	115	102	93.4
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	22.4	24.9	18.9	26.9	23.1
2-Chlorophenol-D4	93951-73-6	1.0	%	46.6	50.2	46.4	55.2	46.2
2.4.6-Tribromophenol	118-79-6	1.0	%	42.4	32.0	30.7	45.1	34.2
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	50.3	55.7	79.4	66.0	53.4
Anthracene-d10	1719-06-8	1.0	%	62.8	68.7	77.1	73.5	67.4
4-Terphenyl-d14	1718-51-0	1.0	%	70.2	77.1	96.0	81.7	73.6
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	34.1	38.3	18.4	39.2	35.4
Phenol-d6	13127-88-3	2	%	25.6	28.9	20.8	29.5	26.9
2-Chlorophenol-D4	93951-73-6	2	%	48.3	51.5	50.5	57.0	48.1
2.4.6-Tribromophenol	118-79-6	2	%	48.6	52.1	22.6	58.9	48.5
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	55.0	59.8	76.2	69.7	56.4
1.2-Dichlorobenzene-D4	2199-69-1	2	%	45.1	49.2	64.2	56.3	46.7
2-Fluorobiphenyl	321-60-8	2	%	45.8	51.5	64.9	60.9	47.7
Anthracene-d10	1719-06-8	2	%	54.2	60.4	71.9	63.1	59.2
4-Terphenyl-d14	1718-51-0	2	%	61.7	67.2	80.4	69.8	61.6
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	131	121	120	123	113
Toluene-D8	2037-26-5	2	%	103	117	114	104	89.3
4-Bromofluorobenzene	460-00-4	2	%	94.2	113	113	94.6	84.7
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	98.8	----	96.9	94.4	102
13C4-PFOS	----	0.02	%	----	93.4	----	----	----
13C8-PFOA	----	0.02	%	98.9	----	98.7	98.1	102
13C8-PFOA	----	0.02	%	----	102	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.62	7.58	----	7.82	7.07
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	20600	22400	----	3230	19600
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	14900	16200	----	1920	12900
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	542	838	----	375	254
Total Alkalinity as CaCO3	----	1	mg/L	542	838	----	375	254
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	32	347	----	87	702
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	7370	7930	----	904	6740
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	372	164	----	59	46
Magnesium	7439-95-4	1	mg/L	408	676	----	70	487
Sodium	7440-23-5	1	mg/L	3700	3770	----	523	3560
Potassium	7440-09-7	1	mg/L	78	22	----	11	4
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L	0.002	0.006	0.003	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	0.002	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.001	0.006	0.011	<0.001	0.002
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	0.045	0.012
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	0.109	0.537	1.89	0.076	0.454
Nickel	7440-02-0	0.001	mg/L	0.002	0.005	0.017	0.066	0.009
Zinc	7440-66-6	0.005	mg/L	0.017	<0.005	0.019	0.054	0.016
Iron	7439-89-6	0.05	mg/L	2.07	1.38	0.44	<0.05	<0.05
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.80	10.7	----	0.90	9.80
Cobalt	7440-48-4	0.001	mg/L	0.003	0.019	----	0.002	0.034

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.109	0.872	----	0.148	3.08
Iron	7439-89-6	0.05	mg/L	5.43	25.4	----	5.31	13.1
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	7.77	1.05	0.58	0.01	<0.10
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.03	<0.01	----	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.02	0.17	----	1.38	0.05
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.05	0.17	0.04	1.38	0.05
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	9.8	3.0	16.2	0.7	4.0
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	9.8	3.2	16.2	2.1	4.0
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.37	0.76	8.62	0.18	0.66
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.03	<0.01	----	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	219	248	----	34.8	210
ø Total Cations	----	0.01	meq/L	215	228	----	31.7	197
ø Ionic Balance	----	0.01	%	0.99	4.05	----	4.61	3.07
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	10	7	13	2	4
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	**6**	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	----	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	----	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	----	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	----	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	77.3	77.1	67.4	68.4	74.2
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	77.6	78.7	67.6	70.5	73.0
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	113	118	110	98.9	119
Toluene-D8	2037-26-5	5	%	113	119	110	106	98.4
4-Bromofluorobenzene	460-00-4	5	%	108	112	101	99.7	112
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	27.5	28.5	26.5	23.2	27.9
2-Chlorophenol-D4	93951-73-6	1.0	%	54.4	59.6	51.8	51.1	55.1
2.4.6-Tribromophenol	118-79-6	1.0	%	45.2	40.9	36.8	34.6	39.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	60.9	66.4	56.8	58.3	62.3
Anthracene-d10	1719-06-8	1.0	%	75.1	76.4	70.3	67.7	74.8
4-Terphenyl-d14	1718-51-0	1.0	%	80.4	83.5	73.7	75.2	82.0
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	38.5	43.5	38.8	36.3	41.5
Phenol-d6	13127-88-3	2	%	30.0	33.2	29.0	27.7	30.9
2-Chlorophenol-D4	93951-73-6	2	%	56.2	61.1	54.2	53.0	58.6
2.4.6-Tribromophenol	118-79-6	2	%	53.8	52.8	46.4	43.6	51.2
EP075T: Base/Neutral Extractable Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012-c	SBT-GW-3022	SBT-GW-3012-a	BH207	BH209
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243342-006	ES2243342-007	ES2243342-008	ES2243342-009	ES2243342-010
				Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	2	%	66.7	72.4	63.1	63.4	67.5
1.2-Dichlorobenzene-D4	2199-69-1	2	%	53.2	59.2	51.7	51.5	55.4
2-Fluorobiphenyl	321-60-8	2	%	55.8	60.2	51.1	52.1	54.9
Anthracene-d10	1719-06-8	2	%	65.7	68.2	57.5	58.8	65.4
4-Terphenyl-d14	1718-51-0	2	%	69.7	70.9	61.2	61.5	69.1
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	132	118	130	112	134
Toluene-D8	2037-26-5	2	%	107	113	104	106	124
4-Bromofluorobenzene	460-00-4	2	%	100	113	95.0	104	119
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	99.5	93.3	----	101	99.4
13C8-PFOA	----	0.02	%	97.8	94.9	----	100	102

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.82**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**3770**	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**2180**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**428**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**428**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**103**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**1030**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**64**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**88**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**635**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**12**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.025**	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.073**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.057**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.041**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.70**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	----	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	----	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	----	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	----	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.002**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	----	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	----	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	----	<0.005	<0.005	----	----
Manganese	7439-96-5	0.001	mg/L	**0.126**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**4.39**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	<0.0001	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	----	----	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.01**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**1.40**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**1.40**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.7**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**2.1**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.16**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	39.8	----	----	----	----
ø Total Cations	----	0.01	meq/L	38.4	----	----	----	----
ø Ionic Balance	----	0.01	%	1.78	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	3	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	<5	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	----	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	----	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	----	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	----	----	----	----
Bromoform	75-25-2	5	µg/L	<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	----	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	----	----	----	----
Fluorene	86-73-7	2	µg/L	<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	----	----	----	----
Pyrene	129-00-0	2	µg/L	<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	----	----	----	----
Chrysene	218-01-9	2	µg/L	<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	----	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	----	----	----	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	<2	----	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	----	----	----	----
Isophorone	78-59-1	2	µg/L	<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	----	----	----	----
Azobenzene	103-33-3	2	µg/L	<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	----	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	----	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	----	----	----	----
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	<2	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	----	----	----	----
Carbazole	86-74-8	2	µg/L	<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	----	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	----	----	----	----
Aldrin	309-00-2	2	µg/L	<2	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	----	----	----	----
Endrin	72-20-8	2	µg/L	<2	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	----	----	----	----
Diazinon	333-41-5	2	µg/L	<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	----	----
Malathion	121-75-5	2	µg/L	<2	----	----	----	----
Fenthion	55-38-9	2	µg/L	<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	----	----	----	----
Ethion	563-12-2	2	µg/L	<2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**64.2**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**70.5**	----	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**104**	----	----	----	----
Toluene-D8	2037-26-5	5	%	**110**	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	**101**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**21.6**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**47.7**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**33.8**	----	----	----	----
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC3_301122-JP	RB-301122-JP	TB-301122-JP	----	----
			Sampling date / time	30-Nov-2022 00:00	30-Nov-2022 00:00	30-Nov-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243342-011	ES2243342-012	ES2243342-013	--------	--------
				Result	Result	Result	----	----
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	55.9	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	67.2	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	71.5	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	33.3	----	----	----	----
Phenol-d6	13127-88-3	2	%	25.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	49.6	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	43.2	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	59.1	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	49.3	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	49.4	----	----	----	----
Anthracene-d10	1719-06-8	2	%	58.3	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	59.9	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	117	121	116	----	----
Toluene-D8	2037-26-5	2	%	110	107	108	----	----
4-Bromofluorobenzene	460-00-4	2	%	105	104	106	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	102	99.6	100	----	----
13C8-PFOA	----	0.02	%	102	98.5	99.0	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2243342**	Page	: 1 of 25
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: Level 3, 101 Sussex Street Sydney	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE292575-4 WSA-SBT	Date Samples Received	: 30-Nov-2022
Order number	: ----	Date Analysis Commenced	: 02-Dec-2022
C-O-C number	: ----	Issue Date	: 08-Dec-2022
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4743632)									
ES2243260-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.72	8.78	0.7	0% - 20%
ES2243342-007	SBT-GW-3022	EA005-P: pH Value	----	0.01	pH Unit	7.58	7.57	0.1	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4743633)									
ES2243479-005	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	566	563	0.6	0% - 20%
ES2243501-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	2780	2830	1.9	0% - 20%
ES2243260-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1670	1710	2.2	0% - 20%
ES2243342-007	SBT-GW-3022	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	22400	22900	1.8	0% - 20%
EW2205548-007	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	86	86	0.0	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4742903)									
ES2243038-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	234	243	3.7	0% - 20%
ES2243252-007	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	658	665	1.1	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4746477)									
ES2243342-001	SBT-GW-3003-c	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	20600	19800	3.6	0% - 20%
ES2243446-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	39	37	5.9	No Limit
ED037P: Alkalinity by PC Titrator (QC Lot: 4743631)									
ES2243260-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	47	55	16.5	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	296	292	1.4	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	342	347	1.2	0% - 20%
ES2243342-007	SBT-GW-3022	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	838	844	0.7	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	838	844	0.7	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4742987)									
ES2243310-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2670	2660	0.1	0% - 20%
ES2243342-004	SBT-GW-3006-w	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	156	156	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4742988)									
ES2243310-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	18900	18900	0.0	0% - 20%
ES2243342-004	SBT-GW-3006-w	ED045G: Chloride	16887-00-6	1	mg/L	615	605	1.6	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4744445)									
ES2243342-001	SBT-GW-3003-c	ED093F: Calcium	7440-70-2	1	mg/L	460	455	1.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	682	672	1.4	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4550	4500	1.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	60	59	0.0	0% - 20%
ES2243557-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	7	6	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	3	3	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	648	656	1.2	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	4	4	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4744443)									
ES2243297-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.020	0.020	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.006	147	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2243342-001	SBT-GW-3003-c	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.006	0.007	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.216	0.214	0.9	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.008	0.007	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.77	0.76	1.4	0% - 50%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4744446)									
WN2215130-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4744446) - continued									
WN2215130-002	Anonymous	EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.239	0.243	1.7	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.009	0.010	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.06	0.06	0.0	No Limit
ES2243557-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.009	0.008	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.010	0.007	35.9	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.007	0.006	24.7	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.004	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.046	0.046	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.58	0.59	0.0	0% - 20%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.12	0.10	26.3	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4742421)									
ES2243342-001	SBT-GW-3003-c	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0005	0.0005	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.003	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.023	0.026	11.3	0% - 20%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.011	0.012	8.8	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.009	0.010	12.9	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.026	0.028	7.0	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.269	0.288	7.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.016	0.017	0.0	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.107	0.116	7.9	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	2.30	2.59	12.0	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	3.61	3.94	8.7	0% - 20%
ES2243342-012	RB-301122-JP	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EG020T: Total Metals by ICP-MS (QC Lot: 4742421) - continued									
ES2243342-012	RB-301122-JP	EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4744444)									
ES2243306-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2243306-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4744447)									
ES2243342-011	QC3_301122-JP	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2243558-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	0.0001	0.0003	84.7	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4742425)									
ES2241990-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2243388-002	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4746509)									
ES2243342-001	SBT-GW-3003-c	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2243342-010	BH209	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4751392)									
ES2243342-001	SBT-GW-3003-c	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2243953-009	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4747761)									
ES2243306-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2243306-011	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.02	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4747763)									
ES2243342-010	BH209	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.10	0.13	28.0	No Limit
ES2243347-004	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.02	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4742986)									
ES2243310-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2243342-004	SBT-GW-3006-w	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4747762)									
ES2243306-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.05	0.05	0.0	No Limit
ES2243306-011	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.47	0.47	0.0	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4747764)									
ES2243342-010	BH209	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.05	0.04	0.0	No Limit
ES2243347-004	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.29	0.29	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4747758)									
ES2243306-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.2	0.2	0.0	No Limit
ES2243306-014	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.4	0.4	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4747760)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4747760) - continued									
ES2243342-010	BH209	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	4.0	3.9	0.0	No Limit
ES2243347-005	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.4	0.4	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4747757)									
ES2243306-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.03	0.03	0.0	No Limit
ES2243306-014	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.03	0.04	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4747759)									
ES2243342-010	BH209	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.66	0.60	8.3	0% - 50%
ES2243347-005	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.03	0.03	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4742985)									
ES2243310-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2243342-004	SBT-GW-3006-w	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4742260)									
ES2243294-013	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	4	4	0.0	No Limit
ES2243342-010	BH209	EP005: Total Organic Carbon	----	1	mg/L	4	<1	115	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4746443)									
ES2242632-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	24	29	16.6	0% - 20%
ES2243500-011	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	6	4	59.2	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4747074)									
ES2243342-001	SBT-GW-3003-c	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2243342-011	QC3_301122-JP	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4747074) - continued									
ES2243342-011	QC3_301122-JP	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4747074)									
ES2243342-001	SBT-GW-3003-c	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2243342-011	QC3_301122-JP	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4747074)									
ES2243342-001	SBT-GW-3003-c	EP074: Carbon disulfide	75-15-0	5	µg/L	5	6	18.8	No Limit
ES2243342-011	QC3_301122-JP	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4747074)									
ES2243342-001	SBT-GW-3003-c	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2243342-011	QC3_301122-JP	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4747074)									
ES2243342-001	SBT-GW-3003-c	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4747074) - continued									
ES2243342-001	SBT-GW-3003-c	EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2243342-011	QC3_301122-JP	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4747074) - continued									
ES2243342-011	QC3_301122-JP	EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4747074)									
ES2243342-001	SBT-GW-3003-c	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2243342-011	QC3_301122-JP	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4747074)									
ES2243342-001	SBT-GW-3003-c	EP074: Chloroform	67-66-3	5	µg/L	8	8	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2243342-011	QC3_301122-JP	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4747075)									
ES2243342-001	SBT-GW-3003-c	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2243342-011	QC3_301122-JP	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4747075)									
ES2243342-001	SBT-GW-3003-c	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2243342-011	QC3_301122-JP	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4747075)									
ES2243342-001	SBT-GW-3003-c	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 4747075) - continued									
ES2243342-001	SBT-GW-3003-c	EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2243342-011	QC3_301122-JP	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4751640)									
ES2243342-002	SBT-GW-3003-b	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4751640)									
ES2243342-002	SBT-GW-3003-b	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4751640)									
ES2243342-002	SBT-GW-3003-b	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.08	0.06	23.2	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4751640)									
ES2243342-002	SBT-GW-3003-b	EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.08	0.06	28.6	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4741918)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	86.6	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	82.3	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	88.9	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4741918)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	82.9	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	88.1	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	88.8	61.5	121
EA005P: pH by PC Titrator (QCLot: 4743632)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4743633)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	90.9	89.9	110
				<1	2100 µS/cm	91.6	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4742903)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	96.5	87.0	109
				<10	293 mg/L	109	75.2	126
				<10	2340 mg/L	108	83.0	124
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4746477)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.3	87.0	109
				<10	293 mg/L	118	75.2	126
				<10	2340 mg/L	97.3	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4743631)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	101	81.0	111
				----	50 mg/L	95.1	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4742987)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	97.0	82.0	122
				<1	500 mg/L	102	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4742988)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	97.2	80.9	127
				<1	1000 mg/L	100	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4744445)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	88.8	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	94.4	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	95.3	82.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED093F: Dissolved Major Cations (QCLot: 4744445) - continued								
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	94.6	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4744443)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	89.6	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.5	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	92.8	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.8	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.1	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	92.8	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.2	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	90.1	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	90.7	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4744446)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	90.4	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.4	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	93.6	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.7	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	93.5	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.9	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.1	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	91.6	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	88.8	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4742421)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	95.9	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.5	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.0	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.4	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	95.3	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.9	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	94.7	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.1	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.4	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.6	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	95.8	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4744444)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG035F: Dissolved Mercury by FIMS (QCLot: 4744444) - continued								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.3	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4744447)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.7	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4742425)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.9	77.0	111
EG050F: Dissolved Hexavalent Chromium (QCLot: 4746509)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	97.9	86.0	112
EG050F: Dissolved Hexavalent Chromium (QCLot: 4751392)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	102	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4747761)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	98.3	90.0	114
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4747763)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	99.6	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4742986)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4747762)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	104	91.0	113
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4747764)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	104	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4747758)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	95.4	69.0	101
				<0.1	1 mg/L	97.8	70.0	118
				<0.1	5 mg/L	97.0	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4747760)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	89.4	69.0	101
				<0.1	1 mg/L	93.6	70.0	118
				<0.1	5 mg/L	86.5	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4747757)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	101	71.3	126
				<0.01	0.442 mg/L	104	71.3	126
				<0.01	1 mg/L	112	71.3	126
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4747759)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	100	71.3	126
				<0.01	0.442 mg/L	103	71.3	126
				<0.01	1 mg/L	102	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4742985)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	103	85.0	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP005: Total Organic Carbon (TOC) (QCLot: 4742260)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	96.4	72.0	120
EP005: Total Organic Carbon (TOC) (QCLot: 4746443)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	103	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4741919)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	94.1	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	101	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	101	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	92.8	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	104	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	93.0	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	95.1	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	98.0	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	95.3	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	103	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	97.3	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	97.1	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	97.8	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	99.2	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	105	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	99.0	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	94.1	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	97.4	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	98.7	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	99.7	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	101	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4741919)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	99.9	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	99.5	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.7	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	95.7	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	103	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	97.6	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	95.2	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	106	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	97.8	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	98.0	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	94.1	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	98.1	69.0	121

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4741919) - continued								
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	97.8	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	98.8	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	100	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	97.5	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	97.8	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	103	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	81.2	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4741918)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4741918)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4747074)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.9	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	95.1	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	95.2	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	98.0	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	92.6	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	96.4	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	95.6	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	95.2	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	92.0	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	95.0	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	94.3	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	94.0	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	95.4	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	91.4	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4747074)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	87.8	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	90.5	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	92.7	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	91.9	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4747074)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	88.4	72.8	127
EP074D: Fumigants (QCLot: 4747074)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	93.3	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	98.0	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	92.3	62.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074D: Fumigants (QCLot: 4747074) - continued								
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	94.5	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	93.4	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4747074)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	92.8	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	98.7	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	92.8	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	94.8	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	90.6	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	93.4	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	90.1	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	95.7	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	90.8	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	95.3	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	95.9	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	90.4	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	90.2	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	86.6	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	95.3	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	96.8	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	94.3	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	101	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	96.4	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	99.6	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	98.0	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	89.1	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	102	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	95.3	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	102	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	88.4	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	89.0	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4747074)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	98.5	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	97.6	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	98.2	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	96.5	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	103	67.0	123
EP074G: Trihalomethanes (QCLot: 4747074)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	98.1	72.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074G: Trihalomethanes (QCLot: 4747074) - continued								
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	93.6	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	94.4	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	98.6	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4741916)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	75.8	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	89.8	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	92.8	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	94.0	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	93.8	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	98.4	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	89.3	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	90.2	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	81.0	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	88.7	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	70.9	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	75.8	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	83.8	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	67.9	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	67.3	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	70.5	59.1	118
EP075A: Phenolic Compounds (QCLot: 4741915)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	33.7	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	64.8	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	58.2	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	57.7	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	77.6	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	65.8	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	81.3	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	72.9	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	72.6	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	79.7	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	85.7	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	# 99.2	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4741915)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	66.6	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	73.8	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	69.4	60.6	106

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4741915) - continued								
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	76.7	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	80.9	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	86.2	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	87.3	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	87.6	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	86.5	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	88.6	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	96.9	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	93.3	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	94.5	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	89.6	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	103	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	87.1	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	86.8	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	85.9	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	86.3	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	84.8	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4741915)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	83.1	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	91.2	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	90.8	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	87.4	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	104	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	84.8	62.1	115
EP075D: Nitrosamines (QCLot: 4741915)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	53.4	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	66.7	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	63.4	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	57.9	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	79.6	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	75.8	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	70.9	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	88.0	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	# 15.2	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4741915)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 4741915) - continued								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	# 36.7	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	76.8	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	71.6	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	80.0	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	81.0	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	86.8	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	75.4	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	95.7	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	89.5	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	83.7	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	88.4	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	73.2	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	71.3	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	94.4	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	92.0	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	81.0	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	94.6	57.7	110
EP075F: Haloethers (QCLot: 4741915)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	73.2	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	77.0	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	88.6	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	96.5	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4741915)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	66.1	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	65.6	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	67.0	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	70.4	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	71.8	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	69.1	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	69.6	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	83.2	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	87.3	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	96.6	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4741915)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	56.1	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	69.0	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	78.7	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	79.2	51.5	96.9

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075H: Anilines and Benzidines (QCLot: 4741915) - continued								
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	83.6	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	79.5	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	91.1	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	98.2	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4741915)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	89.4	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	83.7	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	89.9	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	92.1	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	92.6	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	92.3	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	95.3	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	96.8	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	97.0	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	101	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	94.9	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	92.7	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	94.9	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	110	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	98.9	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4741915)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	81.5	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	84.7	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	90.0	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	104	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	102	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	99.8	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	96.9	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	91.8	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	89.0	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	92.7	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	103	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4741917)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	71.7	53.7	97.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4741917) - continued								
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	76.9	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	81.1	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4747075)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	113	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4741917)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	68.2	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	85.2	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	74.5	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4747075)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	111	75.0	127
EP080: BTEXN (QCLot: 4747075)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	110	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	101	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	104	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	105	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4749077)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	80.6	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	97.8	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	101	65.0	140
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4751640)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	85.8	72.0	130
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.5 µg/L	84.2	68.0	131
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	89.0	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4749077)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	97.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	99.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	96.0	71.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4751640)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	84.7	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	89.2	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	101	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	89.8	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	94.8	71.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4749077)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	98.0	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	107	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	118	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	99.0	71.4	144
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4751640)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	78.6	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	97.0	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	89.8	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	80.6	62.7	135
EP231P: PFAS Sums (QCLot: 4751640)								
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4742987)							
ES2243310-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4742988)							
ES2243310-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4744443)							
ES2243306-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	89.2	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	91.1	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	91.8	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	101	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	91.1	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	104	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	89.2	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	90.7	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	92.2	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4744446)							

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4744446) - continued							
ES2243342-010	BH209	EG020A-F: Arsenic	7440-38-2	1 mg/L	96.4	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	88.5	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	86.0	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	100	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	91.2	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	95.1	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	86.7	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	89.4	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	86.9	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4742421)							
ES2243342-004	SBT-GW-3006-w	EG020A-T: Arsenic	7440-38-2	1 mg/L	99.6	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.6	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	93.7	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	95.8	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	99.3	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	93.6	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	85.5	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	95.4	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	97.8	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4744444)							
ES2243306-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	92.0	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4744447)							
ES2243342-009	BH207	EG035F: Mercury	7439-97-6	0.01 mg/L	92.1	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4742425)							
ES2241990-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	94.1	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4746509)							
ES2243342-001	SBT-GW-3003-c	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	94.6	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4751392)							
ES2243342-001	SBT-GW-3003-c	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	94.6	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4747761)							
ES2243306-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	116	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4747763)							
ES2243342-010	BH209	EK055G: Ammonia as N	7664-41-7	10 mg/L	121	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4742986)							
ES2243310-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	102	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4747762)							

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4747762) - continued							
ES2243306-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	104	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4747764)							
ES2243342-010	BH209	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	90.9	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4747758)							
ES2243306-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	91.2	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4747760)							
ES2243342-011	QC3_301122-JP	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	105	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4747757)							
ES2243306-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	107	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4747759)							
ES2243342-011	QC3_301122-JP	EK067G: Total Phosphorus as P	----	1 mg/L	124	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4742985)							
ES2243310-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	98.8	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4742260)							
ES2243342-001	SBT-GW-3003-c	EP005: Total Organic Carbon	----	100 mg/L	106	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4746443)							
ES2243500-001	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	105	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4747074)							
ES2243342-001	SBT-GW-3003-c	EP074: Benzene	71-43-2	50 µg/L	77.1	70.0	130
		EP074: Toluene	108-88-3	50 µg/L	70.4	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4747074)							
ES2243342-001	SBT-GW-3003-c	EP074: 1.1-Dichloroethene	75-35-4	50 µg/L	94.4	70.0	130
		EP074: Trichloroethene	79-01-6	50 µg/L	70.0	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4747074)							
ES2243342-001	SBT-GW-3003-c	EP074: Chlorobenzene	108-90-7	50 µg/L	71.2	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4747075)							
ES2243342-001	SBT-GW-3003-c	EP080: C6 - C9 Fraction	----	325 µg/L	109	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4747075)							
ES2243342-001	SBT-GW-3003-c	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	105	70.0	130
EP080: BTEXN (QCLot: 4747075)							
ES2243342-001	SBT-GW-3003-c	EP080: Benzene	71-43-2	25 µg/L	116	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	111	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	113	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EP080: BTEXN (QCLot: 4747075) - continued							
ES2243342-001	SBT-GW-3003-c	EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	112	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	114	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	97.7	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4751640)							
ES2243342-002	SBT-GW-3003-b	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	110	72.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	86.0	68.0	131
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	90.8	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4751640)							
ES2243342-002	SBT-GW-3003-b	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	89.9	73.0	129
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	121	72.0	129
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	119	72.0	129
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	104	72.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	101	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4751640)							
ES2243342-002	SBT-GW-3003-b	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	71.2	63.0	143
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	83.8	64.0	140
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	103	67.0	138
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	116	62.7	135

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2243342**	Page	: 1 of 21
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE292575-4 WSA-SBT	Date Samples Received	: 30-Nov-2022
Site	: ----	Issue Date	: 08-Dec-2022
Sampler	: JACK FLANAGAN	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 13

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075A: Phenolic Compounds	QC-4741915-002	----	**Pentachlorophenol**	87-86-5	99.2 %	12.8-95.0%	**Recovery greater than upper control limit**
EP075D: Nitrosamines	QC-4741915-002	----	**Methapyrilene**	91-80-5	15.2 %	23.3-125%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4741915-002	----	**2-Picoline**	109-06-8	36.7 %	41.0-109%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2243310--001	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2243310--001	Anonymous	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2243342-001	SBT-GW-3003-c	**Dibromo-DDE**	21655-73-2	58.6 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2243342-005	SBT-GW-3012-b	**Dibromo-DDE**	21655-73-2	64.3 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2243342-011	QC3_301122-JP	**Dibromo-DDE**	21655-73-2	64.2 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2243342-001	SBT-GW-3003-c	**DEF**	78-48-8	61.6 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2243342-005	SBT-GW-3012-b	**DEF**	78-48-8	63.7 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method		*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)		*Date extracted*	*Due for extraction*	*Days overdue*	*Date analysed*	*Due for analysis*	*Days overdue*
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
SBT-GW-3003-c,	SBT-GW-3003-b,	----	----	----	05-Dec-2022	30-Nov-2022	**5**
SBT-GW-3003-a,	SBT-GW-3006-w,						
SBT-GW-3012-b,	SBT-GW-3012-c,						
SBT-GW-3022,	BH207,						
BH209,	QC3_301122-JP						

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	18	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	18	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	12	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / *Client Sample ID(s)*		***Sample Date***	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**05-Dec-2022**	30-Nov-2022	×
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	BH207,							
BH209,	QC3_301122-JP							
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**05-Dec-2022**	28-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	BH207,							
BH209,	QC3_301122-JP							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, BH207, BH209	**30-Nov-2022**	**----**	----	----	**06-Dec-2022**	07-Dec-2022	✓
Clear Plastic Bottle - Natural (EA015H) QC3_301122-JP	**30-Nov-2022**	**----**	----	----	**07-Dec-2022**	07-Dec-2022	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**----**	----	----	**05-Dec-2022**	14-Dec-2022	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**----**	----	----	**02-Dec-2022**	28-Dec-2022	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**----**	----	----	**02-Dec-2022**	28-Dec-2022	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**----**	----	----	**02-Dec-2022**	28-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**02-Dec-2022**	29-May-2023	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**02-Dec-2022**	29-May-2023	✓	**02-Dec-2022**	29-May-2023	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	BH207,							
BH209,	QC3_301122-JP,							
RB-301122-JP,	TB-301122-JP							
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**05-Dec-2022**	28-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)								
RB-301122-JP,	TB-301122-JP	**30-Nov-2022**	**----**	----	----	**05-Dec-2022**	28-Dec-2022	✓
EG050F: Dissolved Hexavalent Chromium								
Clear Plastic Bottle - NaOH Filtered (EG050G-F)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**06-Dec-2022**	28-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**06-Dec-2022**	28-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**02-Dec-2022**	02-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	BH207,							
BH209,	QC3_301122-JP							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**06-Dec-2022**	28-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**05-Dec-2022**	28-Dec-2022	✓	**06-Dec-2022**	28-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**05-Dec-2022**	28-Dec-2022	✓	**06-Dec-2022**	28-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**02-Dec-2022**	02-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	BH207,							
BH209,	QC3_301122-JP							
EP005: Total Organic Carbon (TOC)								
Amber TOC Vial - Sulfuric Acid (EP005)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**----**	----	----	**05-Dec-2022**	28-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**07-Dec-2022**	14-Jan-2023	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**07-Dec-2022**	14-Jan-2023	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074C: Sulfonated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
BH207,	BH209,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
QC3_301122-JP								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a							
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
BH207,	BH209,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
QC3_301122-JP								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a							
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
BH207,	BH209,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
QC3_301122-JP								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a							
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
BH207,	BH209,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
QC3_301122-JP								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**07-Dec-2022**	14-Jan-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**08-Dec-2022**	14-Jan-2023	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP								
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**07-Dec-2022**	14-Jan-2023	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a,							
BH207,	BH209,							
QC3_301122-JP,	RB-301122-JP							
Amber VOC Vial - Sulfuric Acid (EP080)								
BH207,	BH209,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
QC3_301122-JP,	RB-301122-JP,							
TB-301122-JP								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-3003-c,	SBT-GW-3003-b,	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓
SBT-GW-3003-a,	SBT-GW-3006-w,							
SBT-GW-3012-b,	SBT-GW-3012-c,							
SBT-GW-3022,	SBT-GW-3012-a							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a, BH207, BH209, QC3_301122-JP, RB-301122-JP	**30-Nov-2022**	**05-Dec-2022**	07-Dec-2022	✓	**07-Dec-2022**	14-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) BH207, BH209, QC3_301122-JP, RB-301122-JP, TB-301122-JP	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) BH207, BH209, QC3_301122-JP, RB-301122-JP, TB-301122-JP	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**07-Dec-2022**	14-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-3003-c, SBT-GW-3003-b, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, SBT-GW-3012-a	**30-Nov-2022**	**06-Dec-2022**	14-Dec-2022	✓	**08-Dec-2022**	14-Dec-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) SBT-GW-3003-c, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, BH207, BH209, QC3_301122-JP, RB-301122-JP, TB-301122-JP	**30-Nov-2022**	**06-Dec-2022**	29-May-2023	✓	**08-Dec-2022**	29-May-2023	✓
HDPE (no PTFE) (EP231X-INJ) SBT-GW-3003-b	**30-Nov-2022**	**07-Dec-2022**	29-May-2023	✓	**08-Dec-2022**	29-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) SBT-GW-3003-c, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, BH207, BH209, QC3_301122-JP, RB-301122-JP, TB-301122-JP	**30-Nov-2022**	**06-Dec-2022**	29-May-2023	✓	**08-Dec-2022**	29-May-2023	✓
HDPE (no PTFE) (EP231X-INJ) SBT-GW-3003-b	**30-Nov-2022**	**07-Dec-2022**	29-May-2023	✓	**08-Dec-2022**	29-May-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) SBT-GW-3003-c, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, BH207, BH209, QC3_301122-JP, RB-301122-JP, TB-301122-JP	**30-Nov-2022**	**06-Dec-2022**	29-May-2023	✓	**08-Dec-2022**	29-May-2023	✓
HDPE (no PTFE) (EP231X-INJ) SBT-GW-3003-b	**30-Nov-2022**	**07-Dec-2022**	29-May-2023	✓	**08-Dec-2022**	29-May-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) SBT-GW-3003-c, SBT-GW-3003-a, SBT-GW-3006-w, SBT-GW-3012-b, SBT-GW-3012-c, SBT-GW-3022, BH207, BH209, QC3_301122-JP, RB-301122-JP, TB-301122-JP	**30-Nov-2022**	**06-Dec-2022**	29-May-2023	✓	**08-Dec-2022**	29-May-2023	✓
HDPE (no PTFE) (EP231X-INJ) SBT-GW-3003-b	**30-Nov-2022**	**07-Dec-2022**	29-May-2023	✓	**08-Dec-2022**	29-May-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	5	43	11.63	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	4	30	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	37	10.81	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	18	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	1	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	11	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	11	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	12	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	11	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	43	9.30	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	40	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	6	40	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	6	39	**15.38**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	43	**2.33**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Dissolved Solids (High Level)	EA015H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	18	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	12	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

754-SYDEN292575-4

Consigning Office: Chatswood

Report Results to: Jessica Paulsen — email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com ~~jessica.paulsen@tetratech.com~~

Invoices to: — ~~Phone~~ casey.o'farrell@tetratech.com — Email: ~~ea.dap_labreports@coffey.com~~

Project No: ~~754-SYDEN301932~~ Task No:

Project Name: ~~Sydney Kilns~~ WSA - SBT — Laboratory: ~~Eurofins~~ ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): SH/373/22 V2

Special Instructions: Please forward QC4-301122-JP to Eurofins.

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring Jack	Baseline monitoring HOLD (Ingate blank)	Baseline monitoring sent to ALS for analysis
1	SBT-GW-3003_C	30/11/22	AM	W	7P, 3V, 1A	STD	X	X	
2	SBT-GW-3003_b							X	
3	SBT-GW-3003_a							X	
4	SBT-GW-3006_W							X	
5	SBT-GW-3012_b							X	
6	SBT-GW-3012_c							X	
7	SBT-GW-3022							X	
8	SBT-GW-3012_a							X	
9	BH207		PM					X	
10	BH209							X	
11	~~QC3~~ QC3-301122-JP							X	
12	QC4-301122-JP							X	
13	RB-301122-JP						X	X	
	TB-301122-JP							X	X
								X	
								X	

Environmental Division Sydney
Work Order Reference
ES2243342

Telephone : - 61-2-8784 8555

Forward to Eurofins

RELINQUISHED BY

Name: Jack Flanagan — Date: 30/11/22
Coffey — Time:

Name: — Date:
Company: — Time:

RECEIVED BY

Name: Thanh Le — Date: 30/11/22
Company: ALS — Time: 1744

Name: — Date:
Company: — Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

CERTIFICATE OF ANALYSIS

Work Order	: **ES2243500**	Page	: 1 of 43
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDEN252975-4 WSA	Date Samples Received	: 01-Dec-2022 17:10
Order number	: ----	Date Analysis Commenced	: 02-Dec-2022
C-O-C number	: ----	Issue Date	: 09-Dec-2022 16:45
Sampler	: Jorja Pendlebury, Jorja Pendlebury		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK061G/EK062G: LOR raised for TKN/TN on sample 3 due to sample matrix.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EG035: Poor matrix spike recovery was obtained for Mercury on sample ES2243429 # 1. Confirmed by re-analysis.
- EP074/EP080: Batch ES2243500-4 Result has been confirmed by re-analysis.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EK057G/EK059G: It has been noted that Nitrite is greater than NOx on sample 6, however this difference is within the limits of experimental variation.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.39	7.57	7.46	7.78	7.72
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	18200	21600	24600	25100	526
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	12100	14600	17200	17800	367
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	750	1000	1190	548	130
Total Alkalinity as CaCO3	----	1	mg/L	750	1000	1190	548	130
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	487	577	947	263	52
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	6190	7240	8380	8940	68
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	224	283	322	443	78
Magnesium	7439-95-4	1	mg/L	448	576	1200	626	5
Sodium	7440-23-5	1	mg/L	2710	3380	3360	3900	25
Potassium	7440-09-7	1	mg/L	12	16	40	36	6
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.04	<0.01	<0.01	0.01	0.04
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	0.002	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.007	0.004	0.002
Copper	7440-50-8	0.001	mg/L	0.004	<0.001	<0.001	<0.001	0.002
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	1.16	1.05	1.38	0.254	0.406
Nickel	7440-02-0	0.001	mg/L	0.002	0.001	0.006	0.005	0.008
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.013	0.006	0.006
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	0.13	0.54
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	4.09	1.01	0.22	0.16	2.66
Cobalt	7440-48-4	0.001	mg/L	0.006	0.004	0.007	0.004	0.005

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	1.55	1.18	1.21	0.290	0.809
Iron	7439-89-6	0.05	mg/L	6.11	3.16	0.77	0.54	3.31
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.36	0.82	0.11	3.98	0.10
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.09	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.16	0.02	<0.01	0.02	0.06
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.17	0.11	<0.01	0.02	0.06
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.4	0.9	<0.5	4.2	2.2
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	1.6	1.0	<0.5	4.2	2.3
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.18	0.12	0.11	0.11	0.38
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	0.04
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	200	236	280	269	5.60
ø Total Cations	----	0.01	meq/L	166	209	262	244	5.54
ø Ionic Balance	----	0.01	%	9.15	6.12	3.30	4.76	0.48
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	10	6	6	4	11
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	**11**	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	**12**	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	75.3	92.3	76.1	78.2	79.8
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	88.2	106	88.2	86.2	90.1
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	119	114	111	97.2	111
Toluene-D8	2037-26-5	5	%	121	122	109	122	109
4-Bromofluorobenzene	460-00-4	5	%	117	122	109	124	107
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	24.0	30.0	27.1	25.2	29.8
2-Chlorophenol-D4	93951-73-6	1.0	%	48.7	59.1	54.0	53.3	51.2
2.4.6-Tribromophenol	118-79-6	1.0	%	52.5	51.8	43.9	46.5	42.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	66.6	80.3	68.2	74.0	71.4
Anthracene-d10	1719-06-8	1.0	%	75.9	95.5	81.4	81.2	84.6
4-Terphenyl-d14	1718-51-0	1.0	%	64.3	94.5	71.8	72.9	74.2
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	33.4	45.9	39.2	39.4	40.2
Phenol-d6	13127-88-3	2	%	24.5	31.0	28.2	29.4	32.7
2-Chlorophenol-D4	93951-73-6	2	%	45.7	57.2	51.8	52.6	51.3
2.4.6-Tribromophenol	118-79-6	2	%	33.3	43.0	39.4	37.6	35.5
EP075T: Base/Neutral Extractable Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	SBT-GW-4021	MW01	SBT-GW-1031	SMGW-BH-A107
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-001	ES2243500-002	ES2243500-003	ES2243500-004	ES2243500-005
				Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	2	%	56.4	66.9	62.6	66.0	63.4
1.2-Dichlorobenzene-D4	2199-69-1	2	%	46.9	56.8	51.2	54.6	51.7
2-Fluorobiphenyl	321-60-8	2	%	50.3	57.4	54.2	58.2	54.4
Anthracene-d10	1719-06-8	2	%	56.2	73.1	57.8	60.4	62.6
4-Terphenyl-d14	1718-51-0	2	%	55.8	73.0	59.1	60.7	65.2
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	125	131	118	122	117
Toluene-D8	2037-26-5	2	%	109	118	97.8	113	98.2
4-Bromofluorobenzene	460-00-4	2	%	124	128	112	113	111
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	93.5	95.3	94.3	93.1	92.8
13C8-PFOA	----	0.02	%	99.0	96.7	92.6	99.3	93.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.41	5.88	7.46	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	3860	29400	17000	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	2460	21400	11600	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	92	44	701	----	----
Total Alkalinity as CaCO3	----	1	mg/L	92	44	701	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	640	433	435	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	840	10200	5660	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	17	73	201	----	----
Magnesium	7439-95-4	1	mg/L	46	895	416	----	----
Sodium	7440-23-5	1	mg/L	658	4870	2510	----	----
Potassium	7440-09-7	1	mg/L	3	26	11	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.05	3.69	<0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.003	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0007	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	0.002	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	0.025	0.795	0.002	----	----
Copper	7440-50-8	0.001	mg/L	0.004	<0.001	0.003	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	0.007	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	0.260	4.67	0.844	----	----
Nickel	7440-02-0	0.001	mg/L	0.010	0.498	0.002	----	----
Zinc	7440-66-6	0.005	mg/L	0.041	1.15	<0.005	----	----
Iron	7439-89-6	0.05	mg/L	0.43	1.31	<0.05	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	2.96	10.2	7.23	----	----
Arsenic	7440-38-2	0.001	mg/L	----	----	----	<0.001	<0.001

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	----	----	----	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	----	----	----	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	**0.036**	**0.824**	**0.005**	----	----
Nickel	7440-02-0	0.001	mg/L	----	----	----	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	----	----	----	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	----	----	----	<0.005	<0.005
Manganese	7439-96-5	0.001	mg/L	**0.393**	**4.96**	**0.935**	----	----
Iron	7439-89-6	0.05	mg/L	**4.74**	**1.97**	**7.65**	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	----	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.10**	**0.76**	**0.36**	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.05**	<0.01	**0.02**	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	**0.08**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.02**	<0.01	**0.10**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.6**	**1.1**	**1.7**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.6**	**1.1**	**1.8**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.16**	**0.08**	**0.21**	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	38.8	298	183	----	----
ø Total Cations	----	0.01	meq/L	33.3	290	154	----	----
ø Ionic Balance	----	0.01	%	7.66	1.33	8.62	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	9	9	10	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	<5	<5	<5	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	<5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	----	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	----	----
Fluorene	86-73-7	2	µg/L	<2	<2	<2	----	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	<2	<2	<2	----	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	----	----
Pyrene	129-00-0	2	µg/L	<2	<2	<2	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	----	----
Chrysene	218-01-9	2	µg/L	<2	<2	<2	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	----	----
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	----	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	----	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	----	----
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	----	----
Isophorone	78-59-1	2	µg/L	<2	<2	<2	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	----	----
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	----	----
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	----	----
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	----	----
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	<2	<2	<2	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	----	----
Carbazole	86-74-8	2	µg/L	<2	<2	<2	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	----	----
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	----	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	----	----
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	----	----
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	----	----
Aldrin	309-00-2	2	µg/L	<2	<2	<2	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	----	----
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	----	----
Endrin	72-20-8	2	µg/L	<2	<2	<2	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	----	----
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	----	----
Diazinon	333-41-5	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	----	----
Malathion	121-75-5	2	µg/L	<2	<2	<2	----	----
Fenthion	55-38-9	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	----	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	----	----
Ethion	563-12-2	2	µg/L	<2	<2	<2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**90.7**	**80.2**	**92.4**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**97.8**	**90.4**	**103**	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**106**	**128**	**117**	----	----
Toluene-D8	2037-26-5	5	%	**105**	**127**	**128**	----	----
4-Bromofluorobenzene	460-00-4	5	%	**101**	**123**	**124**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**24.0**	**28.6**	**26.9**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**55.3**	**53.8**	**54.1**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**43.5**	**51.3**	**47.2**	----	----
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-GW-1001	QC5-011222-JP	RB-011222-JP	TB-011222-JP
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2243500-006	ES2243500-007	ES2243500-008	ES2243500-009	ES2243500-010
				Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	81.9	72.0	70.0	----	----
Anthracene-d10	1719-06-8	1.0	%	81.6	86.7	89.7	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	84.1	73.1	83.1	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	27.1	42.5	38.3	----	----
Phenol-d6	13127-88-3	2	%	26.3	31.3	29.1	----	----
2-Chlorophenol-D4	93951-73-6	2	%	51.3	53.2	52.8	----	----
2.4.6-Tribromophenol	118-79-6	2	%	26.6	43.7	40.1	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	72.1	63.9	61.5	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	57.6	49.7	47.5	----	----
2-Fluorobiphenyl	321-60-8	2	%	63.0	53.5	53.4	----	----
Anthracene-d10	1719-06-8	2	%	65.1	64.7	64.6	----	----
4-Terphenyl-d14	1718-51-0	2	%	71.0	62.9	70.1	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	111	136	136	90.5	92.1
Toluene-D8	2037-26-5	2	%	94.6	114	118	92.5	93.3
4-Bromofluorobenzene	460-00-4	2	%	106	125	117	116	114
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	89.0	91.7	87.7	92.6	94.2
13C8-PFOA	----	0.02	%	92.5	92.3	91.3	96.0	95.3

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.71	7.71	7.72	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	14100	15900	14600	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	8630	10200	8850	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1060	1080	771	----	----
Total Alkalinity as CaCO3	----	1	mg/L	1060	1080	771	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	454	446	277	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	4430	5150	4770	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	176	184	223	----	----
Magnesium	7439-95-4	1	mg/L	350	420	221	----	----
Sodium	7440-23-5	1	mg/L	2160	2460	2480	----	----
Potassium	7440-09-7	1	mg/L	35	31	34	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	0.004	0.001	0.004	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	0.004	0.005	0.002	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	0.174	0.166	0.097	----	----
Nickel	7440-02-0	0.001	mg/L	0.004	0.006	0.003	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	----	----
Iron	7439-89-6	0.05	mg/L	0.28	<0.05	0.78	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.03	1.89	7.04	----	----
Cobalt	7440-48-4	0.001	mg/L	0.003	0.005	0.008	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	**0.187**	**0.177**	**0.299**	----	----
Iron	7439-89-6	0.05	mg/L	**0.06**	**6.90**	**8.78**	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**1.16**	**0.69**	**3.57**	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.02**	**0.02**	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.01**	**0.02**	**3.11**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.03**	**0.04**	**3.11**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.2**	**0.8**	**3.8**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.2**	**0.8**	**6.9**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.15**	**0.06**	**0.14**	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**156**	**176**	**156**	----	----
ø Total Cations	----	0.01	meq/L	**132**	**152**	**138**	----	----
ø Ionic Balance	----	0.01	%	**8.04**	**7.50**	**6.01**	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**6**	**4**	**12**	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
Styrene	100-42-5	5	µg/L	<5	<5	<5	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	<5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	----	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	----	----
Fluorene	86-73-7	2	µg/L	<2	<2	<2	----	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	----	----
Anthracene	120-12-7	2	µg/L	<2	<2	<2	----	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	----	----
Pyrene	129-00-0	2	µg/L	<2	<2	<2	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	----	----
Chrysene	218-01-9	2	µg/L	<2	<2	<2	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	----	----
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	----	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	----	----
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	----	----
Isophorone	78-59-1	2	µg/L	<2	<2	<2	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	----	----
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	----	----
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	----	----
Carbazole	86-74-8	2	µg/L	<2	<2	<2	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	----	----
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	----	----
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	----	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	----	----
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	----	----
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	----	----
Aldrin	309-00-2	2	µg/L	<2	<2	<2	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	----	----
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	----	----
Endrin	72-20-8	2	µg/L	<2	<2	<2	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	----	----
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	----	----
Diazinon	333-41-5	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	----	----
Malathion	121-75-5	2	µg/L	<2	<2	<2	----	----
Fenthion	55-38-9	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	----	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	----	----
Ethion	563-12-2	2	µg/L	<2	<2	<2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	91.7	100	82.6	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	99.1	109	91.0	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	90.3	90.5	103	----	----
Toluene-D8	2037-26-5	5	%	113	109	122	----	----
4-Bromofluorobenzene	460-00-4	5	%	113	111	120	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	30.4	29.4	26.6	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	59.6	60.6	50.1	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	57.4	52.1	38.3	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	79.6	82.4	72.6	----	----
Anthracene-d10	1719-06-8	1.0	%	96.0	88.3	85.0	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	90.8	95.3	75.4	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	44.4	44.3	36.6	----	----
Phenol-d6	13127-88-3	2	%	33.4	33.2	29.2	----	----
2-Chlorophenol-D4	93951-73-6	2	%	58.0	60.9	49.0	----	----
2.4.6-Tribromophenol	118-79-6	2	%	44.6	44.4	36.3	----	----
EP075T: Base/Neutral Extractable Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-4014	SBT-GW-4017	SBT-GW-4019	----	----
			Sampling date / time	01-Dec-2022 00:00	01-Dec-2022 00:00	01-Dec-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2243500-011	ES2243500-012	ES2243500-013	--------	--------
				Result	Result	Result	----	----
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	2	%	69.6	75.3	60.7	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	56.4	59.8	48.8	----	----
2-Fluorobiphenyl	321-60-8	2	%	60.6	62.6	52.9	----	----
Anthracene-d10	1719-06-8	2	%	74.3	76.9	64.5	----	----
4-Terphenyl-d14	1718-51-0	2	%	74.1	79.4	65.1	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	95.3	95.5	107	----	----
Toluene-D8	2037-26-5	2	%	101	98.4	116	----	----
4-Bromofluorobenzene	460-00-4	2	%	120	120	126	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	92.5	82.0	92.8	----	----
13C8-PFOA	----	0.02	%	101	96.5	100	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2243500**	Page	: 1 of 26
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDEN252975-4 WSA	Date Samples Received	: 01-Dec-2022
Order number	: ----	Date Analysis Commenced	: 02-Dec-2022
C-O-C number	: ----	Issue Date	: 09-Dec-2022
Sampler	: Jorja Pendlebury, Jorja Pendlebury		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4745385)									
ES2243500-013	SBT-GW-4019	EA005-P: pH Value	----	0.01	pH Unit	7.72	7.72	0.0	0% - 20%
ES2243500-011	SBT-GW-4014	EA005-P: pH Value	----	0.01	pH Unit	7.71	7.72	0.1	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4745382)									
ES2243635-006	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	327	329	0.7	0% - 20%
ES2242632-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	730	728	0.2	0% - 20%
ES2243429-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	7	7	0.0	No Limit
ES2243449-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	49200	49800	1.4	0% - 20%
ES2243500-011	SBT-GW-4014	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	14100	14000	0.4	0% - 20%
ES2243724-003	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	64	64	0.0	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4748314)									
ES2243438-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	478	458	4.2	0% - 20%
ES2243500-007	SBT-GW-1001	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	21400	20100	6.4	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4745384)									
ES2243429-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	3	64.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	2	3	64.0	No Limit
ES2243449-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	25	24	4.9	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	258	243	6.1	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	283	287	1.3	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4745386)									
ES2243500-013	SBT-GW-4019	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED037P: Alkalinity by PC Titrator (QC Lot: 4745386) - continued									
ES2243500-013	SBT-GW-4019	ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	771	772	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	771	772	0.0	0% - 20%
ES2243500-011	SBT-GW-4014	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1060	1060	0.1	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	1060	1060	0.1	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4744211)									
ES2243429-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	12	12	0.0	0% - 50%
ES2243429-010	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4744216)									
ES2243681-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	32	33	3.4	0% - 20%
ES2243500-013	SBT-GW-4019	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	277	278	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4744212)									
ES2243429-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	<1	<1	0.0	No Limit
ES2243429-010	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	3	3	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 4744215)									
ES2243681-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	32	31	0.0	0% - 20%
ES2243500-013	SBT-GW-4019	ED045G: Chloride	16887-00-6	1	mg/L	4770	4790	0.3	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4747975)									
ES2243500-001	MW02	ED093F: Calcium	7440-70-2	1	mg/L	224	217	3.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	448	446	0.6	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	2710	2660	1.7	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	12	12	0.0	0% - 50%
ES2243429-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 4747978)									
ES2243543-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	105	106	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	32	33	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	177	180	1.5	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	10	10	0.0	0% - 50%
EW2205589-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	40	39	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	21	20	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	30	30	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	2	2	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4747973)									
ES2243500-001	MW02	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4747973) - continued									
ES2243500-001	MW02	EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	1.16	1.13	2.5	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.04	<0.01	112	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2243429-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.11	0.10	0.0	0% - 50%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4747977)									
ES2243543-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.318	0.320	0.6	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	7.49	7.62	1.8	0% - 20%
EW2205589-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.012	0.011	0.0	0% - 50%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4747977) - continued									
EW2205589-001	Anonymous	EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.18	0.18	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4747693)									
ES2243429-001	Anonymous	EG020A-T: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.0	No Limit
ES2243500-001	MW02	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.029	0.030	5.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	1.55	1.58	1.8	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.032	0.028	12.2	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	4.09	4.12	0.9	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	6.11	6.25	2.2	0% - 20%
ES2243429-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.134	0.136	0.9	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.013	0.013	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	2.42	2.35	2.8	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	2.62	2.52	4.0	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4747694)									
ES2243500-011	SBT-GW-4014	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.003	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.003	0.004	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.187	0.187	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.004	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.03	0.04	32.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.06	0.06	0.0	No Limit
ES2243718-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4747694) - continued									
ES2243718-006	Anonymous	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.001	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.121	0.120	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	5.83	5.71	2.0	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4747972)									
ES2243429-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2243429-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4747976)									
ES2243644-089	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2243718-006	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4747697)									
--------		EG035T: Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	0.0	No Limit
ES2243500-009	RB-011222-JP	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4746509)									
--------		EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	----	<0.01	0.0	No Limit
ES2243342-010	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4746512)									
ES2243500-012	SBT-GW-4017	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4751256)									
ES2243429-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.12	0.10	10.6	0% - 50%
ES2243429-010	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4751259)									
ES2243500-004	SBT-GW-1031	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	3.98	3.95	0.7	0% - 20%
ES2243543-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	1.61	1.61	0.0	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4744209)									
ES2243429-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2243429-010	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4744213)									
ES2243687-009	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2243500-013	SBT-GW-4019	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4751257)									
ES2243429-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	1.60	1.59	0.0	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4751257) - continued									
ES2243429-010	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4751258)									
ES2243500-004	SBT-GW-1031	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.01	0.0	No Limit
ES2243543-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.27	2.30	1.2	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4751253)									
ES2243429-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.5	0.6	0.0	No Limit
ES2243438-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.2	0.2	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4751255)									
ES2243500-002	SBT-GW-4021	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.9	0.9	0.0	No Limit
ES2243504-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	216	198	8.7	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4751252)									
ES2243429-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.12	0.11	9.7	No Limit
ES2243438-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.04	0.03	32.1	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4751254)									
ES2243500-002	SBT-GW-4021	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.12	0.17	32.1	No Limit
ES2243504-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	56.6	56.2	0.8	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4744210)									
ES2243429-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2243429-010	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4744214)									
ES2243500-013	SBT-GW-4019	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4746443)									
ES2242632-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	24	29	16.6	0% - 20%
ES2243500-011	SBT-GW-4014	EP005: Total Organic Carbon	----	1	mg/L	6	4	59.2	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4749375)									
ES2243500-001	MW02	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4749375) - continued									
ES2243500-001	MW02	EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2243500-011	SBT-GW-4014	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4749375)									
ES2243500-001	MW02	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2243500-011	SBT-GW-4014	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4749375)									
ES2243500-001	MW02	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2243500-011	SBT-GW-4014	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4749375)									
ES2243500-001	MW02	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2243500-011	SBT-GW-4014	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4749375)									
ES2243500-001	MW02	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2243500-011	SBT-GW-4014	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4749375) - continued									
ES2243500-011	SBT-GW-4014	EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4749375)									
ES2243500-001	MW02	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2243500-011	SBT-GW-4014	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4749375)									
ES2243500-001	MW02	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2243500-011	SBT-GW-4014	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4749374)									
ES2243500-001	MW02	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2243500-011	SBT-GW-4014	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4749374)									
ES2243500-001	MW02	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4749374) - continued									
ES2243500-011	SBT-GW-4014	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4749374)									
ES2243500-001	MW02	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2243500-011	SBT-GW-4014	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4744051)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	84.6	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	86.2	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	110	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4744051)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	73.4	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	78.1	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	101	61.5	121
EA005P: pH by PC Titrator (QCLot: 4745385)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4745382)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	91.3	89.9	110
				<1	2100 µS/cm	96.7	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4748314)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	102	87.0	109
				<10	293 mg/L	96.9	75.2	126
				<10	2340 mg/L	102	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4745384)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	101	81.0	111
				----	50 mg/L	112	80.0	120
ED037P: Alkalinity by PC Titrator (QCLot: 4745386)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	101	81.0	111
				----	50 mg/L	112	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4744211)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	98.7	82.0	122
				<1	500 mg/L	104	82.0	122
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4744216)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	101	82.0	122
				<1	500 mg/L	106	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4744212)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	102	80.9	127
				<1	1000 mg/L	103	80.9	127
ED045G: Chloride by Discrete Analyser (QCLot: 4744215)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
ED045G: Chloride by Discrete Analyser (QCLot: 4744215) - continued								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	102	80.9	127
				<1	1000 mg/L	101	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4747975)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	98.9	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	97.7	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	90.5	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	99.1	85.0	113
ED093F: Dissolved Major Cations (QCLot: 4747978)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	98.3	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	97.6	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	93.2	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4747973)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	89.4	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	90.0	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	90.2	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	87.6	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	88.1	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	88.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	89.6	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	90.0	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	87.8	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	88.4	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	90.9	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4747977)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	88.8	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	94.8	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	87.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	88.7	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.6	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	89.6	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	86.7	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.1	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	90.3	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	89.2	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4747693)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	85.8	82.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4747693) - continued								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	90.6	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	86.0	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	88.7	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	89.1	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	88.6	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.6	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	89.1	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.3	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	89.8	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	88.3	85.0	117
EG020T: Total Metals by ICP-MS (QCLot: 4747694)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	87.6	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	92.8	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	86.3	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	88.6	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	90.0	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	89.7	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	89.9	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	87.4	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.8	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	88.0	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	87.2	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4747972)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.3	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4747976)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.7	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4747697)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	98.2	77.0	111
EG050F: Dissolved Hexavalent Chromium (QCLot: 4746509)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	97.9	86.0	112
EG050F: Dissolved Hexavalent Chromium (QCLot: 4746512)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	99.9	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4751256)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	90.0	114
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4751259)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	109	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4744209)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4744209) - continued								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	101	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4744213)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.5	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4751257)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	104	91.0	113
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4751258)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	104	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4751253)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	88.4	69.0	101
				<0.1	1 mg/L	94.8	70.0	118
				<0.1	5 mg/L	92.3	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4751255)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	89.8	69.0	101
				<0.1	1 mg/L	92.5	70.0	118
				<0.1	5 mg/L	87.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4751252)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	101	71.3	126
				<0.01	0.442 mg/L	108	71.3	126
				<0.01	1 mg/L	110	71.3	126
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4751254)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	99.8	71.3	126
				<0.01	0.442 mg/L	106	71.3	126
				<0.01	1 mg/L	106	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4744210)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	99.4	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4744214)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	99.6	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4746443)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	103	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4744053)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	86.7	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	89.7	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	89.4	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	93.2	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	99.6	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	79.1	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.5	65.8	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4744053) - continued								
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	91.1	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	90.3	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	101	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	91.8	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	88.3	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	95.1	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	81.8	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	98.2	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	93.3	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	93.5	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	96.0	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	87.3	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	101	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	86.0	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4744053)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	75.5	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	77.1	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.1	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	74.5	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	95.2	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	91.5	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	101	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	86.8	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	89.1	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	91.4	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	81.7	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	88.3	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	87.2	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	89.8	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	81.9	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	92.8	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	78.6	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	96.6	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	57.0	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4744051)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4744051)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4749375)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	95.9	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	96.0	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	94.7	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	95.6	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	93.2	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.9	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	95.8	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	92.5	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	93.9	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	93.5	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	95.3	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	90.5	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	95.0	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	95.8	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4749375)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	102	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	92.3	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	100	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	94.6	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4749375)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	98.1	72.8	127
EP074D: Fumigants (QCLot: 4749375)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	94.9	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	97.1	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	93.0	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	95.6	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	98.4	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4749375)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	68.4	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	79.3	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	81.8	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	84.7	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	85.9	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	91.4	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	102	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	71.6	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	90.3	74.0	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4749375) - continued								
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	93.1	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	95.0	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	90.6	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	93.1	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	88.6	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	99.7	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	95.7	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	98.1	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	99.7	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	102	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	92.5	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	94.0	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	102	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	98.0	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	104	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	104	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	95.6	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	89.5	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4749375)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	98.2	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	95.9	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	96.5	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	96.4	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	100	67.0	123
EP074G: Trihalomethanes (QCLot: 4749375)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	96.1	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	94.0	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	90.1	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	91.7	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4744055)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	69.8	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	72.8	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	76.5	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	66.9	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	70.7	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	87.2	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	95.8	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	96.7	63.1	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4744055) - continued								
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	76.2	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	74.7	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	77.3	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	72.1	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	86.4	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	76.2	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	76.9	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	89.4	59.1	118
EP075A: Phenolic Compounds (QCLot: 4744054)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	37.4	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	62.9	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	61.1	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	60.0	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	73.4	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	68.0	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	71.2	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	64.0	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	65.6	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	66.2	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	64.6	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	53.4	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4744054)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	66.6	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	67.1	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	61.1	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	67.9	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	70.0	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	68.4	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	76.4	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	77.0	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	74.6	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	72.3	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	68.3	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	74.6	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	70.7	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	76.9	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	# 122	50.0	108

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4744054) - continued								
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	77.0	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	77.7	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	68.4	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	70.3	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	68.2	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4744054)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	65.7	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	67.7	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	78.7	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	76.9	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	92.0	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	84.0	62.1	115
EP075D: Nitrosamines (QCLot: 4744054)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	60.5	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	69.7	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	58.6	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	53.3	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	75.5	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	74.9	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	65.2	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	69.2	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	67.2	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4744054)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	# 33.6	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	73.3	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	71.3	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	77.4	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	68.8	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	68.9	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	77.2	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	52.2	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	71.1	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	72.7	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	62.8	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	60.4	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	# 59.8	60.1	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075E: Nitroaromatics and Ketones (QCLot: 4744054) - continued								
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	60.0	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	74.3	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	63.3	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	67.3	57.7	110
EP075F: Haloethers (QCLot: 4744054)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	70.8	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	80.5	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	65.0	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	63.5	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4744054)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	62.4	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	63.0	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	63.8	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	58.1	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	64.9	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	54.0	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	54.1	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	62.2	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	66.7	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	# 58.7	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4744054)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	60.7	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	68.1	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	66.5	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	66.4	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	70.6	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	59.1	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	78.3	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	66.4	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4744054)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	64.6	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	68.1	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	61.8	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	70.3	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	67.8	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	65.0	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	61.3	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	72.1	59.0	111

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075I: Organochlorine Pesticides (QCLot: 4744054) - continued								
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	65.9	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	69.0	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	64.0	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	65.3	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	68.1	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	74.2	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	81.8	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4744054)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	68.6	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	64.1	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	74.5	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	71.3	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	89.0	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	68.8	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	72.2	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	74.8	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	69.9	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	78.2	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	77.0	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4744052)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	81.1	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	84.5	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	80.4	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4749374)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	82.7	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4744052)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	76.2	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	89.3	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	71.4	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4749374)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	88.6	75.0	127
EP080: BTEXN (QCLot: 4749374)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	108	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	95.7	69.0	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP080: BTEXN (QCLot: 4749374) - continued								
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	93.3	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	92.9	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	96.7	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	91.8	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4750214)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	98.8	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	106	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	109	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4750214)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	109	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	127	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	116	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	120	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4750214)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	108	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	121	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	127	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	115	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4744211)							
ES2243429-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	100	70.0	130
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4744216)							
ES2243500-013	SBT-GW-4019	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4744212)							
ES2243429-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	104	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4744215)							
ES2243500-013	SBT-GW-4019						

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
ED045G: Chloride by Discrete Analyser (QCLot: 4744215) - continued							
ES2243500-013	SBT-GW-4019	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4747973)							
ES2243429-004	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	94.4	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	97.3	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	98.6	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	96.9	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	98.3	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	96.6	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	100	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	96.7	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	95.3	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4747977)							
ES2243543-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	102	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	85.6	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	84.0	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	96.2	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	92.9	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	83.0	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	80.2	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	93.0	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	87.2	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4747693)							
ES2243429-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	71.5	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	84.5	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	88.2	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	93.0	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	90.3	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	103	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	89.2	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	87.3	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	85.9	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4747694)							
ES2243500-012	SBT-GW-4017	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.7	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	85.6	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	85.3	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	101	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	92.5	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4747694) - continued							
ES2243500-012	SBT-GW-4017	EG020A-T: Lead	7439-92-1	1 mg/L	98.3	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	85.2	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	91.9	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	86.3	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4747972)							
ES2243429-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	91.5	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4747976)							
ES2243500-013	SBT-GW-4019	EG035F: Mercury	7439-97-6	0.01 mg/L	90.4	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4747697)							
ES2243429-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	# 62.3	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4746509)							
--------		EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	94.6	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4746512)							
ES2243500-012	SBT-GW-4017	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	98.2	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4751256)							
ES2243429-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	121	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4751259)							
ES2243500-004	SBT-GW-1031	EK055G: Ammonia as N	7664-41-7	1 mg/L	122	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4744209)							
ES2243429-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	104	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4744213)							
ES2243500-013	SBT-GW-4019	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	97.9	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4751257)							
ES2243429-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	108	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4751258)							
ES2243500-004	SBT-GW-1031	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	107	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4751253)							
ES2243429-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	50 mg/L	91.9	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4751255)							
ES2243500-003	MW01	EK061G: Total Kjeldahl Nitrogen as N	----	25 mg/L	92.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4751252)							
ES2243429-002	Anonymous	EK067G: Total Phosphorus as P	----	10 mg/L	104	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4751254)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4751254) - continued							
ES2243500-003	MW01	EK067G: Total Phosphorus as P	----	10 mg/L	105	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4744210)							
ES2243429-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	99.2	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4744214)							
ES2243500-013	SBT-GW-4019	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	96.9	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4746443)							
ES2243500-001	MW02	EP005: Total Organic Carbon	----	100 mg/L	105	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4749375)							
ES2243500-001	MW02	EP074: Benzene	71-43-2	25 µg/L	122	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	124	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4749375)							
ES2243500-001	MW02	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	98.0	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	127	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4749375)							
ES2243500-001	MW02	EP074: Chlorobenzene	108-90-7	25 µg/L	129	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4749374)							
ES2243500-001	MW02	EP080: C6 - C9 Fraction	----	325 µg/L	121	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4749374)							
ES2243500-001	MW02	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	121	70.0	130
EP080: BTEXN (QCLot: 4749374)							
ES2243500-001	MW02	EP080: Benzene	71-43-2	25 µg/L	117	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	118	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	122	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	122	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	120	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	98.6	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2243500**	Page	: 1 of 21
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 754-SYDEN252975-4 WSA	Date Samples Received	: 01-Dec-2022
Site	: ----	Issue Date	: 09-Dec-2022
Sampler	: Jorja Pendlebury, Jorja Pendlebury	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 13

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075B: Polynuclear Aromatic Hydrocarbons	QC-4744054-002	----	**7.12-Dimethylbenz(a)anthracene**	57-97-6	122 %	50.0-108%	**Recovery greater than upper control limit**
EP075E: Nitroaromatics and Ketones	QC-4744054-002	----	**2-Picoline**	109-06-8	33.6 %	41.0-109%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4744054-002	----	**4-Aminobiphenyl**	92-67-1	59.8 %	60.1-112%	**Recovery less than lower control limit**
EP075G: Chlorinated Hydrocarbons	QC-4744054-002	----	**Hexachlorobenzene (HCB)**	118-74-1	58.7 %	65.7-110%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2243500--013	SBT-GW-4019	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2243500--013	SBT-GW-4019	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG035T: Total Recoverable Mercury by FIMS	ES2243429--001	Anonymous	**Mercury**	7439-97-6	62.3 %	70.0-130%	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / **Container** / Client Sample ID(s)		*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
MW02,	SBT-GW-4021,	----	----	----	05-Dec-2022	01-Dec-2022	**4**
MW01,	SBT-GW-1031,						
SMGW-BH-A107,	SBT-CM-1022,						
SBT-GW-1001,	QC5-011222-JP,						
SBT-GW-4014,	SBT-GW-4017,						
SBT-GW-4019							

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP) - Continued					
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)					
Conductivity by Auto Titrator	4	52	7.69	8.33	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	12	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
MW02, SBT-GW-4021, MW01, SBT-GW-1031, SMGW-BH-A107, SBT-CM-1022, SBT-GW-1001, QC5-011222-JP, SBT-GW-4014, SBT-GW-4017, SBT-GW-4019	**01-Dec-2022**	**----**	----	----	**05-Dec-2022**	01-Dec-2022	✗
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P)							
MW02, SBT-GW-4021, MW01, SBT-GW-1031, SMGW-BH-A107, SBT-CM-1022, SBT-GW-1001, QC5-011222-JP, SBT-GW-4014, SBT-GW-4017, SBT-GW-4019	**01-Dec-2022**	**----**	----	----	**05-Dec-2022**	29-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) MW02, SBT-GW-4021, MW01, SBT-GW-1031, SMGW-BH-A107, SBT-CM-1022, SBT-GW-1001, QC5-011222-JP, SBT-GW-4014, SBT-GW-4017, SBT-GW-4019	**01-Dec-2022**	**----**	----	----	**08-Dec-2022**	08-Dec-2022	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) MW02, SBT-GW-4021, MW01, SBT-GW-1031, SMGW-BH-A107, SBT-CM-1022, SBT-GW-1001, QC5-011222-JP, SBT-GW-4014, SBT-GW-4017, SBT-GW-4019	**01-Dec-2022**	**----**	----	----	**05-Dec-2022**	15-Dec-2022	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) MW02, SBT-GW-4021, MW01, SBT-GW-1031, SMGW-BH-A107, SBT-CM-1022, SBT-GW-1001, QC5-011222-JP, SBT-GW-4014, SBT-GW-4017, SBT-GW-4019	**01-Dec-2022**	**----**	----	----	**02-Dec-2022**	29-Dec-2022	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) MW02, SBT-GW-4021, MW01, SBT-GW-1031, SMGW-BH-A107, SBT-CM-1022, SBT-GW-1001, QC5-011222-JP, SBT-GW-4014, SBT-GW-4017, SBT-GW-4019	**01-Dec-2022**	**----**	----	----	**02-Dec-2022**	29-Dec-2022	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) MW02, SBT-GW-4021, MW01, SBT-GW-1031, SMGW-BH-A107, SBT-CM-1022, SBT-GW-1001, QC5-011222-JP, SBT-GW-4014, SBT-GW-4017, SBT-GW-4019	**01-Dec-2022**	**----**	----	----	**05-Dec-2022**	29-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**----**	----	----	**05-Dec-2022**	30-May-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-T)								
SBT-GW-4014		**01-Dec-2022**	**05-Dec-2022**	30-May-2023	✓	**05-Dec-2022**	30-May-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**05-Dec-2022**	30-May-2023	✓	**05-Dec-2022**	30-May-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
RB-011222-JP,	TB-011222-JP,							
SBT-GW-4017,	SBT-GW-4019							
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**----**	----	----	**07-Dec-2022**	29-Dec-2022	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)								
RB-011222-JP,	TB-011222-JP	**01-Dec-2022**	**----**	----	----	**07-Dec-2022**	29-Dec-2022	✓
EG050F: Dissolved Hexavalent Chromium								
Clear Plastic Bottle - NaOH Filtered (EG050G-F)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**----**	----	----	**06-Dec-2022**	29-Dec-2022	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**----**	----	----	**08-Dec-2022**	29-Dec-2022	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**----**	----	----	**02-Dec-2022**	03-Dec-2022	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**----**	----	----	**08-Dec-2022**	29-Dec-2022	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	29-Dec-2022	✓	**08-Dec-2022**	29-Dec-2022	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	29-Dec-2022	✓	**08-Dec-2022**	29-Dec-2022	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**----**	----	----	**02-Dec-2022**	03-Dec-2022	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP005: Total Organic Carbon (TOC)								
Amber TOC Vial - Sulfuric Acid (EP005)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**----**	----	----	**06-Dec-2022**	29-Dec-2022	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP074A: Monocyclic Aromatic Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP074)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓
EP074B: Oxygenated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074C: Sulfonated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074G: Trihalomethanes								
Amber VOC Vial - Sulfuric Acid (EP074)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
RB-011222-JP,	SBT-GW-4014,							
SBT-GW-4017,	SBT-GW-4019							
Amber VOC Vial - Sulfuric Acid (EP080)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
RB-011222-JP,	TB-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**06-Dec-2022**	08-Dec-2022	✓	**09-Dec-2022**	15-Jan-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
RB-011222-JP,	SBT-GW-4014,							
SBT-GW-4017,	SBT-GW-4019							
Amber VOC Vial - Sulfuric Acid (EP080)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
RB-011222-JP,	TB-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**08-Dec-2022**	15-Dec-2022	✓
MW01,	SMGW-BH-A107,							
SBT-CM-1022,	SBT-GW-1001,							
RB-011222-JP,	TB-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1031,	QC5-011222-JP	**01-Dec-2022**	**07-Dec-2022**	15-Dec-2022	✓	**09-Dec-2022**	15-Dec-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	30-May-2023	✓	**09-Dec-2022**	30-May-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
RB-011222-JP,	TB-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	30-May-2023	✓	**09-Dec-2022**	30-May-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
RB-011222-JP,	TB-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	30-May-2023	✓	**09-Dec-2022**	30-May-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
RB-011222-JP,	TB-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
MW02,	SBT-GW-4021,	**01-Dec-2022**	**07-Dec-2022**	30-May-2023	✓	**09-Dec-2022**	30-May-2023	✓
MW01,	SBT-GW-1031,							
SMGW-BH-A107,	SBT-CM-1022,							
SBT-GW-1001,	QC5-011222-JP,							
RB-011222-JP,	TB-011222-JP,							
SBT-GW-4014,	SBT-GW-4017,							
SBT-GW-4019								

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	35	**11.43**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	6	52	**11.54**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	3	21	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	38	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	32	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	12	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	11	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	24	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	11	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	36	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	5	39	**12.82**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	11	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	35	**11.43**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	52	**7.69**	**8.33**	×	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Major Cations - Dissolved	ED093F	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	24	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	36	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	6	39	**15.38**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	6	40	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	52	**1.92**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	24	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	12	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	24	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens ~~Jessica Paulsen~~ email: emma.stephens@tetratech.com ~~Mobile:~~ ~~Email~~ Email: jack.flanagan@tetratech.com ~~jessica.paulsen@tetratech.com~~

Invoices to: ~~Phone:~~ casey.ofarrell@tetratech.com Email: esdat_labreports@coffey.com

Project No: ~~754-SYDEN301932~~ 754-SYDEN2[illegible]75-4 Task No:

Project Name: ~~Sydney Kilns~~ WSA Laboratory: ~~Eurofins~~ ALS

Sampler's Name: ~~Jack Flanagan~~ Jorja Pendlebury Project Manager: Emma Stephens

Quote number (if different to current quoted prices):

Special Instructions: Please forward QC6_011122_JP to Eurofins

Analysis Request Section

Environmental Division Sydney
Work Order Reference
ES2243500

Telephone : + 61-2-8784 8555

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline monitoring suite	Baseline monitoring ~~HOLD~~ Rinsate blank extended suite	Baseline monitoring trip blank extend suite	
1	MW02	1/12/22	AM	W	7P, 3V, 1A	STD	X	X		
2	SBT-GW-4021							X		
3	MW01							X		
4	SBT-GW-1031							X		
5	SMGW-BH-A107							X		
6	SBT-CM-1022							X		
7	SBT-GW-1001							X		
8	QCS_011122_JP							X		
–	QC6-011122-JP							X		Please forward to Eurofins
9	RB_011122_JP				3P, 2V, 1A			X X		
10	TB_011122_JP				3P, 2V, ~~1A~~			X	X	
11	SBT-GW-4014				7P, 3V, 1A		X	X		
12	SBT-GW-4017						X	X		
17	SBT-GW-4019						X	X		
								X		
								X		

RELINQUISHED BY		RECEIVED BY	
Name: ~~Jack Flanagan~~ Jorja Pendlebury	Date: 01/12/22	Name: Thanh Le	Date: 1/12/22
Coffey	Time: 13:00	Company: ALS	Time: 1710
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No.

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

CERTIFICATE OF ANALYSIS

Work Order	: **ES2244263**	Page	: 1 of 30
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA-SBT	Date Samples Received	: 07-Dec-2022 17:30
Order number	: ----	Date Analysis Commenced	: 08-Dec-2022
C-O-C number	: ----	Issue Date	: 19-Dec-2022 10:55
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075: Poor Surrogate recovery for particular compounds due to sample matrix interferences.
- EK055G: LOR raised for Ammonia on sample 4 due to sample matrix.
- EK061G/EK062G: LOR raised for TKN/TN on sample 7 due to sample matrix.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EP080/EP074: Batch ES2244263 positive results has been confirmed by re-analysis.
- TDS by method EA-015 sample 4 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EK057G: It has been noted that Nitrite is greater than NOx on sample 2,(Confirmed by re-analysis)
- EP075(SIM): Surrogate recovery bias low due to sample matrix interferences.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.30	7.40	7.78	7.15	4.92
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	8100	19700	4670	25500	21400
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	5490	13100	2750	19100	14300
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	141	1300	824	1040	<1
Total Alkalinity as CaCO3	----	1	mg/L	141	1300	824	1040	<1
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	339	560	168	1460	1060
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	2990	7010	1080	9050	7890
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	72	191	41	360	18
Magnesium	7439-95-4	1	mg/L	168	701	92	984	624
Sodium	7440-23-5	1	mg/L	1430	3660	999	4410	3630
Potassium	7440-09-7	1	mg/L	6	43	2	27	4
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	5.31
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	0.002
Cadmium	7440-43-9	0.0001	mg/L	0.0002	<0.0001	<0.0001	<0.0001	0.0004
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	0.002
Cobalt	7440-48-4	0.001	mg/L	0.057	0.004	<0.001	0.002	0.350
Copper	7440-50-8	0.001	mg/L	0.001	<0.001	<0.001	<0.001	0.030
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	0.002
Manganese	7439-96-5	0.001	mg/L	1.46	0.994	0.006	0.062	0.723
Nickel	7440-02-0	0.001	mg/L	0.018	0.003	<0.001	0.002	0.239
Zinc	7440-66-6	0.005	mg/L	0.020	0.022	<0.005	0.007	1.09
Iron	7439-89-6	0.05	mg/L	6.95	0.28	<0.05	<0.05	0.33
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	2.74	0.06	0.31	0.34	21.1
Cobalt	7440-48-4	0.001	mg/L	0.065	0.004	0.021	0.006	0.476

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	1.53	1.18	3.47	0.144	1.56
Iron	7439-89-6	0.05	mg/L	11.3	1.05	12.6	0.46	7.42
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.12	1.94	<0.01	<0.10	0.13
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.76	<0.01	0.02	0.02
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	2.67	<0.01	5.36	12.1	6.25
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	2.67	0.74	5.36	12.1	6.27
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.3	2.3	1.5	1.6	7.8
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	5.0	3.0	6.9	13.7	14.1
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.43	0.46	0.09	0.09	1.57
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.27	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	94.2	235	50.4	306	245
ø Total Cations	----	0.01	meq/L	79.8	228	53.1	291	210
ø Ionic Balance	----	0.01	%	8.30	1.70	2.60	2.51	7.56
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	21	20	11	18	24
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	**60**	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	**1.5**	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	**1.5**	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	**4**
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	**320**	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	**320**	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	**320**	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.03**	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.04**	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.03**	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.09**	<0.01	<0.01	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**77.2**	**100**	**89.2**	**78.4**	**83.8**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**101**	**106**	**96.6**	**83.4**	**91.6**
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**118**	**133**	**112**	**119**	**107**
Toluene-D8	2037-26-5	5	%	**116**	**129**	**105**	**112**	**103**
4-Bromofluorobenzene	460-00-4	5	%	**110**	**122**	**102**	**107**	**99.0**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**21.0**	**31.1**	**Not Determined**	**34.4**	**34.7**
2-Chlorophenol-D4	93951-73-6	1.0	%	**44.1**	**63.7**	**15.6**	**67.7**	**68.9**
2.4.6-Tribromophenol	118-79-6	1.0	%	**60.3**	**82.1**	**45.3**	**79.2**	**88.3**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	**52.9**	**72.9**	**76.4**	**91.0**	**72.4**
Anthracene-d10	1719-06-8	1.0	%	**56.6**	**79.9**	**65.2**	**78.0**	**78.9**
4-Terphenyl-d14	1718-51-0	1.0	%	**60.3**	**86.3**	**86.9**	**82.5**	**86.1**
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	**31.6**	**18.9**	**26.1**	**45.7**	**50.6**
Phenol-d6	13127-88-3	2	%	**20.3**	**26.5**	**6.7**	**25.8**	**26.7**
2-Chlorophenol-D4	93951-73-6	2	%	**39.5**	**58.3**	**10.0**	**57.9**	**59.8**
2.4.6-Tribromophenol	118-79-6	2	%	**45.8**	**51.3**	**21.4**	**49.2**	**51.4**
EP075T: Base/Neutral Extractable Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SMGW-BH-C324	SMGW-BH-C321	SMGW-BH-C332	SMGW-BH-C330
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00
Compound	CAS Number	LOR	Unit	ES2244263-001	ES2244263-002	ES2244263-003	ES2244263-004	ES2244263-005
				Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	2	%	43.8	67.1	68.9	63.3	69.3
1.2-Dichlorobenzene-D4	2199-69-1	2	%	37.2	53.6	53.3	51.1	53.2
2-Fluorobiphenyl	321-60-8	2	%	41.2	55.5	61.1	44.3	55.8
Anthracene-d10	1719-06-8	2	%	49.5	65.1	47.8	66.5	66.0
4-Terphenyl-d14	1718-51-0	2	%	39.4	60.0	70.0	66.8	68.4
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	116	130	107	115	104
Toluene-D8	2037-26-5	2	%	113	126	101	109	100
4-Bromofluorobenzene	460-00-4	2	%	104	112	94.9	102	95.8
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	101	98.5	97.8	97.7	102
13C8-PFOA	----	0.02	%	95.3	97.5	96.2	102	99.2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.10	7.50	6.33	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	13900	25400	8030	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	9340	17400	5420	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	671	643	135	----	----
Total Alkalinity as CaCO3	----	1	mg/L	671	643	135	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1310	718	333	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	4340	9240	2890	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	168	190	70	----	----
Magnesium	7439-95-4	1	mg/L	554	723	162	----	----
Sodium	7440-23-5	1	mg/L	2290	4520	1390	----	----
Potassium	7440-09-7	1	mg/L	24	5	6	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	0.003	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0002	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	0.006	0.004	0.054	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	2.39	1.06	1.46	----	----
Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.017	----	----
Zinc	7440-66-6	0.005	mg/L	0.006	0.011	0.020	----	----
Iron	7439-89-6	0.05	mg/L	1.49	0.49	6.44	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.34	0.19	2.72	----	----
Arsenic	7440-38-2	0.001	mg/L	----	----	----	<0.001	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	----	----	----	<0.001	----
Copper	7440-50-8	0.001	mg/L	----	----	----	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	**0.006**	**0.006**	**0.066**	----	----
Nickel	7440-02-0	0.001	mg/L	----	----	----	<0.001	----
Lead	7439-92-1	0.001	mg/L	----	----	----	<0.001	----
Zinc	7440-66-6	0.005	mg/L	----	----	----	<0.005	----
Manganese	7439-96-5	0.001	mg/L	**2.63**	**1.31**	**1.55**	----	----
Iron	7439-89-6	0.05	mg/L	**2.51**	**1.18**	**11.1**	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	----	<0.0001	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.11**	**0.10**	**0.11**	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.02**	<0.01	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.11**	<0.01	**0.48**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.13**	<0.01	**0.48**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.0**	<0.5	**2.1**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.1**	<0.5	**2.6**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.10**	**0.09**	**0.44**	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	163	288	91.2	----	----
ø Total Cations	----	0.01	meq/L	154	266	77.4	----	----
ø Ionic Balance	----	0.01	%	2.81	4.10	8.13	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	42	9	20	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	<5	<5	<5	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	**80**	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	<5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	**1.1**	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	**1.1**	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	----	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	----	----
Fluorene	86-73-7	2	µg/L	<2	<2	<2	----	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	<2	<2	<2	----	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	----	----
Pyrene	129-00-0	2	µg/L	<2	<2	<2	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	----	----
Chrysene	218-01-9	2	µg/L	<2	<2	<2	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	----	----
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	----	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	----	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	----	----
Acetophenone	98-86-2	2	µg/L	<2	**36**	<2	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	----	----
Isophorone	78-59-1	2	µg/L	<2	<2	<2	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	----	----
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	----	----
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	----	----
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	----	----
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	<2	<2	<2	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	----	----
Carbazole	86-74-8	2	µg/L	<2	<2	<2	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	----	----
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	----	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	----	----
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	----	----
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	----	----
Aldrin	309-00-2	2	µg/L	<2	<2	<2	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	----	----
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	----	----
Endrin	72-20-8	2	µg/L	<2	<2	<2	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	----	----
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	----	----
Diazinon	333-41-5	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	----	----
Malathion	121-75-5	2	µg/L	<2	<2	<2	----	----
Fenthion	55-38-9	2	µg/L	<2	<2	<2	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	----	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	----	----
Ethion	563-12-2	2	µg/L	<2	<2	<2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	**390**	<20	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	**400**	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	**400**	<20	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	**0.5**	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	**0.03**	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	**0.04**	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	**0.50**	**0.07**	<0.01	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**87.8**	**77.7**	**71.7**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**97.0**	**87.4**	**79.0**	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**125**	**128**	**122**	----	----
Toluene-D8	2037-26-5	5	%	**117**	**119**	**116**	----	----
4-Bromofluorobenzene	460-00-4	5	%	**113**	**116**	**112**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**39.5**	**33.2**	**26.7**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**75.7**	**64.0**	**53.3**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**91.7**	**79.5**	**75.9**	----	----
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-D109S	SMGW-BH-C320	QC7_071222_SF	RB_071222_SF	----
			Sampling date / time	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	07-Dec-2022 14:00	----
Compound	CAS Number	LOR	Unit	ES2244263-006	ES2244263-007	ES2244263-008	ES2244263-009	--------
				Result	Result	Result	Result	----
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	79.7	71.8	65.3	----	----
Anthracene-d10	1719-06-8	1.0	%	88.6	77.6	71.5	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	92.8	81.5	77.8	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	53.4	43.3	37.9	----	----
Phenol-d6	13127-88-3	2	%	30.1	25.8	21.0	----	----
2-Chlorophenol-D4	93951-73-6	2	%	62.7	58.4	49.0	----	----
2.4.6-Tribromophenol	118-79-6	2	%	54.9	36.2	37.6	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	74.1	62.9	53.8	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	60.9	52.0	44.0	----	----
2-Fluorobiphenyl	321-60-8	2	%	64.4	55.1	49.4	----	----
Anthracene-d10	1719-06-8	2	%	72.2	66.6	61.4	----	----
4-Terphenyl-d14	1718-51-0	2	%	61.8	65.4	58.0	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	121	124	119	107	----
Toluene-D8	2037-26-5	2	%	114	113	110	101	----
4-Bromofluorobenzene	460-00-4	2	%	106	106	103	96.7	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	84.4	90.6	97.8	94.1	----
13C8-PFOA	----	0.02	%	99.4	99.6	97.9	102	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2244263**	Page	: 1 of 22
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA-SBT	Date Samples Received	: 07-Dec-2022
Order number	: ----	Date Analysis Commenced	: 08-Dec-2022
C-O-C number	: ----	Issue Date	: 19-Dec-2022
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4759328)									
ES2244213-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.74	6.75	0.1	0% - 20%
ES2244213-017	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.95	7.94	0.1	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4759327)									
EW2205704-011	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	<1	0.0	No Limit
ES2244213-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	31	31	0.0	0% - 20%
ES2244213-017	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1210	1220	1.1	0% - 20%
ES2244483-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1960	1980	1.1	0% - 20%
ES2244483-010	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	2930	2950	0.7	0% - 20%
EW2205704-008	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	152	153	0.0	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4763611)									
ES2243362-005	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	542	526	3.2	0% - 20%
ES2244263-006	SMGW-BH-D109S	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	9340	9370	0.3	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4759329)									
ES2244213-017	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	150	172	13.4	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	150	172	13.4	0% - 20%
ES2244483-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	8	158	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	364	355	2.6	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	364	363	0.0	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4755563)									
ES2244263-001	SBT-GW-1024	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	339	334	1.5	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4755563) - continued									
ME2202125-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	384	388	0.9	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4755564)									
ES2244263-001	SBT-GW-1024	ED045G: Chloride	16887-00-6	1	mg/L	2990	2990	0.1	0% - 20%
ME2202125-003	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	170	169	0.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4763765)									
ES2244108-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	1	1	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	5	5	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit
ES2244263-007	SMGW-BH-C320	ED093F: Calcium	7440-70-2	1	mg/L	190	193	1.7	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	723	738	2.1	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4520	4590	1.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4763763)									
ES2244108-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.03	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2244263-007	SMGW-BH-C320	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	1.06	1.09	2.7	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.011	0.012	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.49	0.50	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4762576)									
ES2244263-001	SBT-GW-1024	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.009	0.009	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4762576) - continued									
ES2244263-001	SBT-GW-1024	EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.006	0.007	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.065	0.065	0.0	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.026	0.027	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.012	0.012	0.0	0% - 50%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	1.53	1.53	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.032	0.032	0.0	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.056	0.054	4.0	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	2.74	2.79	1.8	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	11.3	11.4	1.6	0% - 20%
ES2244288-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.042	0.043	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.004	121	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.016	101	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.10	0.08	16.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.25	1.25	0.0	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4768262)									
ES2244263-009	RB_071222_SF	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2244793-003	Anonymous	EG020A-T: Copper	7440-50-8	0.001	mg/L	0.008	0.004	68.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.05	0.89	17.0	0% - 20%
ES2244793-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0046	0.0044	4.7	0% - 20%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.010	0.010	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.016	0.015	0.0	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.011	0.012	10.1	0% - 50%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	2.08	2.05	1.4	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4768262) - continued									
ES2244793-003	Anonymous	EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.037	0.036	3.4	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.060	0.096	46.4	0% - 50%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	2.21	2.16	2.0	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4763764)									
ES2244108-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2244263-006	SMGW-BH-D109S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4768485)									
ES2244263-009	RB_071222_SF	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4770060)									
ES2244263-001	SBT-GW-1024	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2244338-002	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4761391)									
ES2244263-001	SBT-GW-1024	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.12	0.12	0.0	0% - 50%
ES2244288-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.02	86.4	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4755561)									
ES2244263-004	SMGW-BH-C332	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2244263-001	SBT-GW-1024	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4761392)									
ES2244263-001	SBT-GW-1024	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.67	2.65	0.8	0% - 20%
ES2244288-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.06	0.06	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4761388)									
ES2244263-001	SBT-GW-1024	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.3	2.3	0.0	No Limit
ES2244288-003	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.4	0.4	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4761387)									
ES2244263-001	SBT-GW-1024	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.43	0.45	5.6	0% - 20%
ES2244288-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4755562)									
ES2244263-001	SBT-GW-1024	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ME2202125-003	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4757122)									
ES2244263-001	SBT-GW-1024	EP005: Total Organic Carbon	----	1	mg/L	21	18	12.3	0% - 20%
ES2244312-002	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	14	12	8.0	0% - 50%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4762252)									
ES2244263-001	SBT-GW-1024	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4762252) - continued									
ES2244263-001	SBT-GW-1024	EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2244273-002	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4762252)									
ES2244263-001	SBT-GW-1024	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	60	70	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2244273-002	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4762252)									
ES2244263-001	SBT-GW-1024	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2244273-002	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4762252)									
ES2244263-001	SBT-GW-1024	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074D: Fumigants (QC Lot: 4762252) - continued									
ES2244263-001	SBT-GW-1024	EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2244273-002	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4762252)									
ES2244263-001	SBT-GW-1024	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2244273-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4762252) - continued									
ES2244273-002	Anonymous	EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4762252)									
ES2244263-001	SBT-GW-1024	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2244273-002	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4762252)									
ES2244263-001	SBT-GW-1024	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2244273-002	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074G: Trihalomethanes (QC Lot: 4762252) - continued									
ES2244273-002	Anonymous	EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4762253)									
ES2244263-001	SBT-GW-1024	EP080: C6 - C9 Fraction	----	20	µg/L	320	310	0.0	0% - 50%
ES2244273-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4762253)									
ES2244263-001	SBT-GW-1024	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	320	310	0.0	0% - 50%
ES2244273-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4762253)									
ES2244263-001	SBT-GW-1024	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2244273-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4755066)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	74.2	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	79.6	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	83.5	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4755066)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	79.0	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	77.9	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	99.2	61.5	121
EA005P: pH by PC Titrator (QCLot: 4759328)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4759327)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	93.9	89.9	110
				<1	2100 µS/cm	92.7	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4763611)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	102	87.0	109
				<10	293 mg/L	107	75.2	126
				<10	2340 mg/L	109	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4759329)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	98.6	81.0	111
				----	50 mg/L	110	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4755563)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	97.1	82.0	122
				<1	500 mg/L	98.4	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4755564)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	102	80.9	127
				<1	1000 mg/L	103	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4763765)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	100	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	104	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	103	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	101	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4763763)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	83.7	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4763763) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	88.7	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.1	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	89.0	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	85.6	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	85.8	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	85.7	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	85.2	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	86.2	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	85.1	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	84.1	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4762576)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	94.3	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.1	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.0	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.7	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.5	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.8	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.7	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.5	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.1	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	93.7	85.0	117
EG020T: Total Metals by ICP-MS (QCLot: 4768262)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	97.9	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.8	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	99.4	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	100	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.3	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	97.0	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	100	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	98.8	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.1	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4763764)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.4	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4768485)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.4	77.0	111

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG050F: Dissolved Hexavalent Chromium (QCLot: 4770060)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	103	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4761391)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.4	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4755561)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4761392)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	99.8	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4761388)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	86.5	69.0	101
				<0.1	1 mg/L	86.2	70.0	118
				<0.1	5 mg/L	96.2	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4761387)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	93.9	71.3	126
				<0.01	0.442 mg/L	94.6	71.3	126
				<0.01	1 mg/L	106	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4755562)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	100	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4757122)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	95.7	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4755067)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	89.0	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	86.8	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	96.5	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	89.9	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	99.8	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	91.2	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.5	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	89.4	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	88.6	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	97.9	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	91.9	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	95.0	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	95.7	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	85.7	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	104	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	95.3	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	102	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	104	65.2	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4755067) - continued								
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	106	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	102	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	104	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4755067)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	95.4	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	93.7	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	26.8	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	102	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	98.3	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	99.3	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	98.6	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	106	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	93.8	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	96.6	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	94.1	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	92.8	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	87.1	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	90.2	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	98.9	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	94.3	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	96.8	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	97.0	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	93.6	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4755066)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4755066)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4762252)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	101	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	96.3	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	97.6	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	98.2	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	92.2	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.9	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	97.0	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	97.1	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	96.3	74.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4762252) - continued								
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	92.8	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	92.6	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	98.3	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	92.5	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	93.9	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4762252)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	118	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	84.3	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	102	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	88.6	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4762252)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	93.3	72.8	127
EP074D: Fumigants (QCLot: 4762252)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	102	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	96.4	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	100	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	99.1	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	100	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4762252)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	65.1	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	84.4	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	88.1	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	80.8	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	94.1	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	95.0	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	100	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	86.1	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	95.9	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	102	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	96.5	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	96.4	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	105	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	102	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	97.9	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	105	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	104	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	99.0	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	104	71.0	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4762252) - continued								
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	85.5	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	94.4	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	108	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	103	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	108	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	101	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	123	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	69.1	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4762252)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	101	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	97.1	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	96.6	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	95.9	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	89.7	67.0	123
EP074G: Trihalomethanes (QCLot: 4762252)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	96.1	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	98.6	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	94.0	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	93.5	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4755064)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	70.7	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	76.8	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	77.6	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	88.1	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	87.5	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	81.9	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	91.9	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	93.1	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	93.0	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	85.0	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	102	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	77.3	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	88.2	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	89.2	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	91.0	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	88.1	59.1	118
EP075A: Phenolic Compounds (QCLot: 4755063)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075A: Phenolic Compounds (QCLot: 4755063) - continued								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	35.8	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	61.1	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	60.1	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	58.0	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	74.2	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	72.2	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	73.0	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	73.7	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	75.7	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	77.5	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	77.1	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	81.6	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4755063)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	72.7	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	73.8	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	72.6	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	77.8	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	78.0	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	78.6	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	87.9	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	87.2	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	88.9	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	87.0	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	100	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	86.6	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	90.2	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	84.3	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	90.1	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	87.1	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	83.9	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	82.7	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	79.8	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	83.2	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4755063)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	82.7	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	93.5	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	96.3	68.4	122

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075C: Phthalate Esters (QCLot: 4755063) - continued								
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	90.9	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	127	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	90.4	62.1	115
EP075D: Nitrosamines (QCLot: 4755063)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	100	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	70.4	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	61.5	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	56.6	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	73.4	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	75.1	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	71.2	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	82.3	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	90.2	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4755063)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	# 40.5	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	73.9	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	77.0	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	78.0	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	84.2	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	85.0	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	87.6	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	92.4	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	85.9	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	81.0	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	82.8	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	# 102	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	84.4	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	80.9	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	88.9	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	92.5	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	90.3	57.7	110
EP075F: Haloethers (QCLot: 4755063)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	75.5	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	76.5	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	80.5	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	78.3	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4755063)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075G: Chlorinated Hydrocarbons (QCLot: 4755063) - continued								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	67.1	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	74.4	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	65.7	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	65.4	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	68.4	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	70.3	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	69.2	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	66.8	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	81.1	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	79.9	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4755063)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	56.2	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	75.5	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	82.9	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	81.9	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	79.1	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	93.3	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	88.4	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	102	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4755063)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	81.5	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	80.9	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	83.3	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	88.0	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	88.9	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	89.5	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	86.7	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	94.8	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	84.2	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	87.0	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	91.8	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	91.4	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	89.0	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	96.7	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	96.5	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075J: Organophosphorus Pesticides (QCLot: 4755063)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	84.8	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	77.8	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	90.7	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	90.6	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	100	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	86.7	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	91.1	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	94.2	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	91.4	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	91.6	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	90.4	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4755065)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	68.4	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	89.8	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	103	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4762253)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	79.8	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4755065)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	70.6	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	99.2	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	90.6	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4762253)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	78.8	75.0	127
EP080: BTEXN (QCLot: 4762253)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	77.6	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	80.2	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	83.2	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	82.8	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	80.7	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	92.8	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4760554)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	79.8	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	89.6	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	100	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4760554)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	97.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.0	72.0	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4760554) - continued								
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	94.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	98.4	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4760554)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	116	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	89.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	110	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	107	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4755563)							
ES2244263-001	SBT-GW-1024	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4755564)							
ES2244263-001	SBT-GW-1024	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4763763)							
ES2244108-005	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	119	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	126	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	128	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	124	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	126	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	122	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	127	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	122	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	127	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4762576)							
ES2244263-002	SMGW-BH-C324	EG020A-T: Arsenic	7440-38-2	1 mg/L	103	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	94.4	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	89.0	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	96.0	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	94.6	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4762576) - continued							
ES2244263-002	SMGW-BH-C324	EG020A-T: Lead	7439-92-1	1 mg/L	88.5	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	90.0	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	93.2	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	92.7	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4768262)							
ES2244642-030	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.5	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	102	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.5	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	99.1	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	101	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	103	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	99.9	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	99.3	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	97.5	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4763764)							
ES2244108-004	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	84.5	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4768485)							
ES2244263-009	RB_071222_SF	EG035T: Mercury	7439-97-6	0.01 mg/L	96.5	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4770060)							
ES2244263-001	SBT-GW-1024	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	91.0	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4761391)							
ES2244263-001	SBT-GW-1024	EK055G: Ammonia as N	7664-41-7	1 mg/L	82.2	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4755561)							
ES2244263-001	SBT-GW-1024	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	102	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4761392)							
ES2244263-001	SBT-GW-1024	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4761388)							
ES2244263-002	SMGW-BH-C324	EK061G: Total Kjeldahl Nitrogen as N	----	10 mg/L	99.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4761387)							
ES2244263-002	SMGW-BH-C324	EK067G: Total Phosphorus as P	----	2 mg/L	113	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4755562)							
ES2244263-001	SBT-GW-1024	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	98.4	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4757122)							
ES2244263-002	SMGW-BH-C324	EP005: Total Organic Carbon	----	100 mg/L	99.1	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4762252)							
ES2244263-001	SBT-GW-1024	EP074: Benzene	71-43-2	25 µg/L	94.8	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	93.8	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4762252)							
ES2244263-001	SBT-GW-1024	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	90.9	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	92.7	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4762252)							
ES2244263-001	SBT-GW-1024	EP074: Chlorobenzene	108-90-7	25 µg/L	92.5	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4762253)							
ES2244263-001	SBT-GW-1024	EP080: C6 - C9 Fraction	----	325 µg/L	86.0	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4762253)							
ES2244263-001	SBT-GW-1024	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	82.1	70.0	130
EP080: BTEXN (QCLot: 4762253)							
ES2244263-001	SBT-GW-1024	EP080: Benzene	71-43-2	25 µg/L	97.1	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	96.3	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	102	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	98.6	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	100	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	83.7	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2244263**	Page	: 1 of 18
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA-SBT	Date Samples Received	: 07-Dec-2022
Site	: ----	Issue Date	: 19-Dec-2022
Sampler	: JACK FLANAGAN	No. of samples received	: 9
Order number	: ----	No. of samples analysed	: 9

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075E: Nitroaromatics and Ketones	QC-4755063-002	----	**2-Picoline**	109-06-8	40.5 %	41.0-109%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4755063-002	----	**Phenacetin**	62-44-2	102 %	57.8-101%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2244263--001	SBT-GW-1024	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2244263--001	SBT-GW-1024	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	ES2244263--001	SBT-GW-1024	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075S: Acid Extractable Surrogates	ES2244263-003	SMGW-BH-C321	**Phenol-d6**	13127-88-3	6.7 %	10.0-69.0 %	**Recovery less than lower data quality objective**
EP075S: Acid Extractable Surrogates	ES2244263-003	SMGW-BH-C321	**2-Chlorophenol-D4**	93951-73-6	10.0 %	20.9-130 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / **Container** / Client Sample ID(s)		*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
SBT-GW-1024,	SMGW-BH-C324,	----	----	----	12-Dec-2022	07-Dec-2022	**5**
SMGW-BH-C321,	SMGW-BH-C332,						
SMGW-BH-C330,	SMGW-BH-D109S,						
SMGW-BH-C320,	QC7_071222_SF						

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP) - Continued					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)					
Conductivity by Auto Titrator	4	49	8.16	8.33	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**12-Dec-2022**	07-Dec-2022	×
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**12-Dec-2022**	04-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**14-Dec-2022**	14-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**12-Dec-2022**	21-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**08-Dec-2022**	04-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**08-Dec-2022**	04-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**13-Dec-2022**	04-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**13-Dec-2022**	05-Jun-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SBT-GW-1024, SMGW-BH-C324, SMGW-BH-C321, SMGW-BH-C332, SMGW-BH-C330, SMGW-BH-D109S, SMGW-BH-C320, QC7_071222_SF	**07-Dec-2022**	**12-Dec-2022**	05-Jun-2023	✓	**12-Dec-2022**	05-Jun-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) RB_071222_SF	**07-Dec-2022**	**14-Dec-2022**	05-Jun-2023	✓	**14-Dec-2022**	05-Jun-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) SBT-GW-1024, SMGW-BH-C324, SMGW-BH-C321, SMGW-BH-C332, SMGW-BH-C330, SMGW-BH-D109S, SMGW-BH-C320, QC7_071222_SF	**07-Dec-2022**	**----**	----	----	**14-Dec-2022**	04-Jan-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) RB_071222_SF	**07-Dec-2022**	**----**	----	----	**15-Dec-2022**	04-Jan-2023	✓
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050G-F) SBT-GW-1024, SMGW-BH-C324, SMGW-BH-C321, SMGW-BH-C332, SMGW-BH-C330, SMGW-BH-D109S, SMGW-BH-C320, QC7_071222_SF	**07-Dec-2022**	**----**	----	----	**15-Dec-2022**	04-Jan-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT-GW-1024, SMGW-BH-C324, SMGW-BH-C321, SMGW-BH-C332, SMGW-BH-C330, SMGW-BH-D109S, SMGW-BH-C320, QC7_071222_SF	**07-Dec-2022**	**----**	----	----	**14-Dec-2022**	04-Jan-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT-GW-1024, SMGW-BH-C324, SMGW-BH-C321, SMGW-BH-C332, SMGW-BH-C330, SMGW-BH-D109S, SMGW-BH-C320, QC7_071222_SF	**07-Dec-2022**	**----**	----	----	**08-Dec-2022**	09-Dec-2022	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT-GW-1024, SMGW-BH-C324, SMGW-BH-C321, SMGW-BH-C332, SMGW-BH-C330, SMGW-BH-D109S, SMGW-BH-C320, QC7_071222_SF	**07-Dec-2022**	**----**	----	----	**14-Dec-2022**	04-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**12-Dec-2022**	04-Jan-2023	✓	**14-Dec-2022**	04-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**12-Dec-2022**	04-Jan-2023	✓	**14-Dec-2022**	04-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**08-Dec-2022**	09-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP005: Total Organic Carbon (TOC)								
Amber TOC Vial - Sulfuric Acid (EP005)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**----**	----	----	**12-Dec-2022**	04-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**15-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**15-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**15-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**15-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**15-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**15-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP074A: Monocyclic Aromatic Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP074B: Oxygenated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP074C: Sulfonated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP074G: Trihalomethanes								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**14-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1024,	SMGW-BH-C324,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**19-Dec-2022**	18-Jan-2023	✓
SMGW-BH-C321,	SMGW-BH-C332,							
SMGW-BH-C330,	SMGW-BH-D109S,							
SMGW-BH-C320,	QC7_071222_SF							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1024, SMGW-BH-C321, SMGW-BH-C330, SMGW-BH-C320, RB_071222_SF	SMGW-BH-C324, SMGW-BH-C332, SMGW-BH-D109S, QC7_071222_SF,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**15-Dec-2022**	18-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1024, SMGW-BH-C321, SMGW-BH-C330, SMGW-BH-C320, RB_071222_SF	SMGW-BH-C324, SMGW-BH-C332, SMGW-BH-D109S, QC7_071222_SF,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1024, SMGW-BH-C321, SMGW-BH-C330, SMGW-BH-C320, RB_071222_SF	SMGW-BH-C324, SMGW-BH-C332, SMGW-BH-D109S, QC7_071222_SF,	**07-Dec-2022**	**09-Dec-2022**	14-Dec-2022	✓	**15-Dec-2022**	18-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1024, SMGW-BH-C321, SMGW-BH-C330, SMGW-BH-C320, RB_071222_SF	SMGW-BH-C324, SMGW-BH-C332, SMGW-BH-D109S, QC7_071222_SF,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1024, SMGW-BH-C321, SMGW-BH-C330, SMGW-BH-C320, RB_071222_SF	SMGW-BH-C324, SMGW-BH-C332, SMGW-BH-D109S, QC7_071222_SF,	**07-Dec-2022**	**14-Dec-2022**	21-Dec-2022	✓	**15-Dec-2022**	21-Dec-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1024, SMGW-BH-C321, SMGW-BH-C330, SMGW-BH-C320, RB_071222_SF	SMGW-BH-C324, SMGW-BH-C332, SMGW-BH-D109S, QC7_071222_SF,	**07-Dec-2022**	**13-Dec-2022**	05-Jun-2023	✓	**15-Dec-2022**	05-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1024, SMGW-BH-C321, SMGW-BH-C330, SMGW-BH-C320, RB_071222_SF	SMGW-BH-C324, SMGW-BH-C332, SMGW-BH-D109S, QC7_071222_SF,	**07-Dec-2022**	**13-Dec-2022**	05-Jun-2023	✓	**15-Dec-2022**	05-Jun-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1024, SMGW-BH-C321, SMGW-BH-C330, SMGW-BH-C320, RB_071222_SF	SMGW-BH-C324, SMGW-BH-C332, SMGW-BH-D109S, QC7_071222_SF,	**07-Dec-2022**	**13-Dec-2022**	05-Jun-2023	✓	**15-Dec-2022**	05-Jun-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT-GW-1024, SMGW-BH-C321, SMGW-BH-C330, SMGW-BH-C320, RB_071222_SF	SMGW-BH-C324, SMGW-BH-C332, SMGW-BH-D109S, QC7_071222_SF,	**07-Dec-2022**	**13-Dec-2022**	05-Jun-2023	✓	**15-Dec-2022**	05-Jun-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	6	49	12.24	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	8	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	8	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	1	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	5	40	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	8	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	49	8.16	8.33	×	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	49	**2.04**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	8	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	8	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	8	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): SY/247/22 V2

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
1	SBT-GW-1024	7/12/22	2.00	Water	Bottles	Std (5-day)		✓												
2	SMGW-BH-C324			Water	Bottles	Std (5-day)		✓												
3	SMGW-BH-C321			Water	Bottles	Std (5-day)		✓												
4	SMGW-BH-C332			Water	Bottles	Std (5-day)		✓												
5	SMGW-BH-C330			Water	Bottles	Std (5-day)		✓												
6	SMGW-BH-D109s			Water	Bottles	Std (5-day)		✓												
7	SMGW-BH-C320			Water	Bottles	Std (5-day)		✓												
8	QC7_071222_JF			Water	Bottles	Std (5-day)		✓												
—	QC8_071222_JF			Water	Bottles	Std (5-day)		✓												Send to Eurofins
9	RB_071222_JF			Water	Bottles	Std (5-day)					✓									
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

RELINQUISHED BY		RECEIVED BY	
Name: JF	Date: 7/12/22	Name: [illegible]	Date: 07/12/22
Coffey	Time: 2.00	Company: AS	Time: 1730
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐

Lab. Ref

Environmental Division Sydney
Work Order Reference
ES2244263

Telephone : + 61-2-8784 8555

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

HT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2244937**	Page	: 1 of 53
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: Level 3, 101 Sussex Street Sydney	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 12-Dec-2022 19:30
Order number	: ----	Date Analysis Commenced	: 13-Dec-2022
C-O-C number	: ----	Issue Date	: 23-Dec-2022 13:42
Sampler	: JP		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 22		
No. of samples analysed	: 22		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK061G: LOR raised for TKN on various samples due to sample matrix.
- EK067G: LOR raised for Total Phosphorus on various samples on due to sample matrix.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- It has been noted that Nitrite is greater than NOx for sample 1, however this difference is within the limits of experimental variation.
- EP074/EP080: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly. All positive results has been confirmed by re-analysis.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.68	6.49	6.42	5.37	7.70
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	4220	3400	3860	3420	24300
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	2760	2080	2340	1970	16700
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	92	51	47	3	495
Total Alkalinity as CaCO3	----	1	mg/L	92	51	47	3	495
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	702	396	311	76	642
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	991	926	1130	1130	8740
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	15	10	10	3	369
Magnesium	7439-95-4	1	mg/L	53	40	39	32	968
Sodium	7440-23-5	1	mg/L	808	792	772	704	4670
Potassium	7440-09-7	1	mg/L	2	2	2	1	18
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.04	0.03	0.02	0.24	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	0.0002	<0.0001	0.0001	0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.030	0.024	0.023	0.013	0.026
Copper	7440-50-8	0.001	mg/L	0.002	<0.001	<0.001	0.004	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	0.301	0.376	0.371	0.059	1.01
Nickel	7440-02-0	0.001	mg/L	0.012	0.011	0.012	0.010	0.012
Zinc	7440-66-6	0.005	mg/L	0.063	0.050	0.049	0.160	0.014
Iron	7439-89-6	0.05	mg/L	0.43	1.25	1.27	0.10	0.64
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.98	1.54	0.83	1.34	19.3
Cobalt	7440-48-4	0.001	mg/L	0.034	0.024	0.025	0.014	0.085

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.380	0.423	0.417	0.093	4.96
Iron	7439-89-6	0.05	mg/L	3.17	9.32	6.77	4.39	179
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.24	0.14	0.22	1.25
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.05	0.02	<0.01	0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.02	0.09	0.64	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.04	0.09	0.65	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.6	0.8	0.4	1.1	1.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	0.6	0.8	0.5	1.8	1.5
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.06	0.11	0.08	0.12	0.07
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	44.4	35.4	39.3	33.5	270
ø Total Cations	----	0.01	meq/L	40.3	38.3	37.3	33.4	302
ø Ionic Balance	----	0.01	%	4.84	3.94	2.54	0.13	5.58
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	9	8	5	6	4
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	----	----	----	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	----	----	<0.5
beta-BHC	319-85-7	0.5	µg/L	----	----	----	----	<0.5
gamma-BHC	58-89-9	0.5	µg/L	----	----	----	----	<0.5
delta-BHC	319-86-8	0.5	µg/L	----	----	----	----	<0.5
Heptachlor	76-44-8	0.5	µg/L	----	----	----	----	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.5	µg/L	----	----	----	----	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----	----	----	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	----	----	----	----	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----	----	----	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	----	----	----	----	<0.5
Dieldrin	60-57-1	0.5	µg/L	----	----	----	----	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	----	----	----	----	<0.5
Endrin	72-20-8	0.5	µg/L	----	----	----	----	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----	----	----	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	----	----	----	----	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----	----	----	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----	----	----	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	----	----	----	----	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	----	----	----	----	<0.5
Methoxychlor	72-43-5	2.0	µg/L	----	----	----	----	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	----	----	----	----	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	----	----	----	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	----	----	----	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	----	----	----	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----	----	----	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	----	----	----	----	<2.0
Dimethoate	60-51-5	0.5	µg/L	----	----	----	----	<0.5
Diazinon	333-41-5	0.5	µg/L	----	----	----	----	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----	----	----	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	----	----	----	----	<2.0
Malathion	121-75-5	0.5	µg/L	----	----	----	----	<0.5
Fenthion	55-38-9	0.5	µg/L	----	----	----	----	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----	----	----	<0.5
Parathion	56-38-2	2.0	µg/L	----	----	----	----	<2.0
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	----	----	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	----	----	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	----	----	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	----	----	----	----	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Prothiofos	34643-46-4	0.5	µg/L	----	----	----	----	<0.5
Ethion	563-12-2	0.5	µg/L	----	----	----	----	<0.5
Carbophenothion	786-19-6	0.5	µg/L	----	----	----	----	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	----	----	----	----	<0.5
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	**6**
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	<5	<5	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	<5	<5	----
1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	<5	<5	----
1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	<5	<5	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP074H: Naphthalene								
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	----	----	----	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	----	----	----	----	<1.0
Acenaphthene	83-32-9	1.0	µg/L	----	----	----	----	<1.0
Fluorene	86-73-7	1.0	µg/L	----	----	----	----	<1.0
Phenanthrene	85-01-8	1.0	µg/L	----	----	----	----	<1.0
Anthracene	120-12-7	1.0	µg/L	----	----	----	----	<1.0
Fluoranthene	206-44-0	1.0	µg/L	----	----	----	----	<1.0
Pyrene	129-00-0	1.0	µg/L	----	----	----	----	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	----	----	----	----	<1.0
Chrysene	218-01-9	1.0	µg/L	----	----	----	----	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	----	----	----	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	----	----	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	----	----	----	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	----	----	----	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	----	----	----	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	----	----	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	----	----	----	<2
2-Chlorophenol	95-57-8	2	µg/L	----	----	----	----	<2
2-Methylphenol	95-48-7	2	µg/L	----	----	----	----	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	----	----	----	<4
2-Nitrophenol	88-75-5	2	µg/L	----	----	----	----	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
2.4-Dimethylphenol	105-67-9	2	µg/L	----	----	----	----	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	----	----	----	----	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	----	----	----	----	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	----	----	----	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	----	----	----	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	----	----	----	<2
Pentachlorophenol	87-86-5	4	µg/L	----	----	----	----	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	----	----	----	<2
2-Methylnaphthalene	91-57-6	2	µg/L	----	----	----	----	<2
2-Chloronaphthalene	91-58-7	2	µg/L	----	----	----	----	<2
Acenaphthylene	208-96-8	2	µg/L	----	----	----	----	<2
Acenaphthene	83-32-9	2	µg/L	----	----	----	----	<2
Fluorene	86-73-7	2	µg/L	----	----	----	----	<2
Phenanthrene	85-01-8	2	µg/L	----	----	----	----	<2
Anthracene	120-12-7	2	µg/L	----	----	----	----	<2
Fluoranthene	206-44-0	2	µg/L	----	----	----	----	<2
Pyrene	129-00-0	2	µg/L	----	----	----	----	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	----	----	----	<2
Benz(a)anthracene	56-55-3	2	µg/L	----	----	----	----	<2
Chrysene	218-01-9	2	µg/L	----	----	----	----	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	----	----	----	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	----	----	----	<2
Benzo(a)pyrene	50-32-8	2	µg/L	----	----	----	----	<2
3-Methylcholanthrene	56-49-5	2	µg/L	----	----	----	----	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	----	----	----	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	----	----	----	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	----	----	----	<2
^ Sum of PAHs	----	2	µg/L	----	----	----	----	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	----	----	----	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	----	----	----	<2
Diethyl phthalate	84-66-2	2	µg/L	----	----	----	----	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	----	----	----	----	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued								
Butyl benzyl phthalate	85-68-7	2	µg/L	----	----	----	----	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	----	----	----	<10
Di-n-octylphthalate	117-84-0	2	µg/L	----	----	----	----	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	----	----	----	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	----	----	----	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	----	----	----	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	----	----	----	----	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	----	----	----	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	----	----	----	----	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	----	----	----	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	----	----	----	<4
Methapyrilene	91-80-5	2	µg/L	----	----	----	----	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	----	----	----	----	<2
Acetophenone	98-86-2	2	µg/L	----	----	----	----	<2
Nitrobenzene	98-95-3	2	µg/L	----	----	----	----	<2
Isophorone	78-59-1	2	µg/L	----	----	----	----	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	----	----	----	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	----	----	----	<4
1-Naphthylamine	134-32-7	2	µg/L	----	----	----	----	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	----	----	----	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	----	----	----	<2
Azobenzene	103-33-3	2	µg/L	----	----	----	----	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	----	----	----	<2
Phenacetin	62-44-2	2	µg/L	----	----	----	----	<2
4-Aminobiphenyl	92-67-1	2	µg/L	----	----	----	----	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	----	----	----	----	<2
Pronamide	23950-58-5	2	µg/L	----	----	----	----	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	----	----	----	<2
Chlorobenzilate	510-15-6	2	µg/L	----	----	----	----	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	----	----	----	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP075F: Haloethers - Continued								
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	----	----	----	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	----	----	----	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	----	----	----	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	----	----	----	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	----	----	----	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	----	----	----	<2
Hexachloroethane	67-72-1	2	µg/L	----	----	----	----	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	----	----	----	<2
Hexachloropropylene	1888-71-7	2	µg/L	----	----	----	----	<2
Hexachlorobutadiene	87-68-3	2	µg/L	----	----	----	----	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	----	----	----	<10
Pentachlorobenzene	608-93-5	2	µg/L	----	----	----	----	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	----	----	----	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	----	----	----	----	<2
4-Chloroaniline	106-47-8	2	µg/L	----	----	----	----	<2
2-Nitroaniline	88-74-4	4	µg/L	----	----	----	----	<4
3-Nitroaniline	99-09-2	4	µg/L	----	----	----	----	<4
Dibenzofuran	132-64-9	2	µg/L	----	----	----	----	<2
4-Nitroaniline	100-01-6	2	µg/L	----	----	----	----	<2
Carbazole	86-74-8	2	µg/L	----	----	----	----	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	----	----	----	<2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	----	----	----	----	<2
beta-BHC	319-85-7	2	µg/L	----	----	----	----	<2
gamma-BHC	58-89-9	2	µg/L	----	----	----	----	<2
delta-BHC	319-86-8	2	µg/L	----	----	----	----	<2
Heptachlor	76-44-8	2	µg/L	----	----	----	----	<2
Aldrin	309-00-2	2	µg/L	----	----	----	----	<2
Heptachlor epoxide	1024-57-3	2	µg/L	----	----	----	----	<2
alpha-Endosulfan	959-98-8	2	µg/L	----	----	----	----	<2
4.4`-DDE	72-55-9	2	µg/L	----	----	----	----	<2
Dieldrin	60-57-1	2	µg/L	----	----	----	----	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
Endrin	72-20-8	2	µg/L	----	----	----	----	<2
beta-Endosulfan	33213-65-9	2	µg/L	----	----	----	----	<2
4.4`-DDD	72-54-8	2	µg/L	----	----	----	----	<2
Endosulfan sulfate	1031-07-8	2	µg/L	----	----	----	----	<2
4.4`-DDT	50-29-3	4	µg/L	----	----	----	----	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	----	----	----	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	----	----	----	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	----	----	----	<2
Dimethoate	60-51-5	2	µg/L	----	----	----	----	<2
Diazinon	333-41-5	2	µg/L	----	----	----	----	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	----	----	----	<2
Malathion	121-75-5	2	µg/L	----	----	----	----	<2
Fenthion	55-38-9	2	µg/L	----	----	----	----	<2
Chlorpyrifos	2921-88-2	2	µg/L	----	----	----	----	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	----	----	----	----	<2
Chlorfenvinphos	470-90-6	2	µg/L	----	----	----	----	<2
Prothiofos	34643-46-4	2	µg/L	----	----	----	----	<2
Ethion	563-12-2	2	µg/L	----	----	----	----	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	----	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	----	----	----	----	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	----	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	----	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	----	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	----	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	----	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	----	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	----	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	----	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	----	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	----	<0.05
EP231P: PFAS Sums								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	----	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	----	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	60.4	65.4	73.9	75.9	69.0
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	69.4	75.5	70.5	72.6	68.2
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	92.3	111	104	119	119
Toluene-D8	2037-26-5	5	%	96.9	108	104	98.6	108
4-Bromofluorobenzene	460-00-4	5	%	98.8	111	110	115	109
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	26.9	34.1	34.1	35.1	37.8
2-Chlorophenol-D4	93951-73-6	1.0	%	59.3	66.9	67.5	69.2	73.2
2.4.6-Tribromophenol	118-79-6	1.0	%	46.6	74.9	75.6	80.5	74.5
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	73.6	79.1	81.5	83.0	78.7
Anthracene-d10	1719-06-8	1.0	%	75.5	82.0	83.6	88.0	86.7
4-Terphenyl-d14	1718-51-0	1.0	%	84.2	85.2	86.0	93.0	80.8
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	35.8	46.0	46.2	43.9	53.8
Phenol-d6	13127-88-3	2	%	26.8	34.4	31.8	33.6	38.8
2-Chlorophenol-D4	93951-73-6	2	%	54.7	65.3	64.9	62.7	70.9
2.4.6-Tribromophenol	118-79-6	2	%	37.6	64.8	57.8	64.1	58.6
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	69.7	71.1	69.4	69.7	74.8
1.2-Dichlorobenzene-D4	2199-69-1	2	%	62.0	67.1	64.1	64.0	65.6
2-Fluorobiphenyl	321-60-8	2	%	63.9	66.8	67.6	65.8	63.3
Anthracene-d10	1719-06-8	2	%	67.0	75.6	73.5	78.6	77.1
4-Terphenyl-d14	1718-51-0	2	%	71.6	73.0	69.0	76.7	73.6
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	96.5	117	110	125	124
Toluene-D8	2037-26-5	2	%	92.9	104	100	94.4	103
4-Bromofluorobenzene	460-00-4	2	%	90.8	115	111	118	113

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1022	SBT-CM-1020D	SBT-CM-1020M	SBT-CM-1020S	SBT-GW-1019rS
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-001	ES2244937-002	ES2244937-003	ES2244937-004	ES2244937-005
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	----	----	----	----	97.3
13C8-PFOA	----	0.02	%	----	----	----	----	101

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.73	7.68	7.81	7.69	7.62
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	29300	28400	1110	1100	1110
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	19100	19200	627	844	1010
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	575	575	258	252	282
Total Alkalinity as CaCO3	----	1	mg/L	575	575	258	252	282
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	802	762	76	70	69
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	10700	10600	167	167	172
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	373	375	28	27	20
Magnesium	7439-95-4	1	mg/L	988	996	15	14	11
Sodium	7440-23-5	1	mg/L	4710	4760	198	202	200
Potassium	7440-09-7	1	mg/L	18	18	5	5	3
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.024	0.025	<0.001	<0.001	0.002
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	1.04	1.05	0.026	0.029	0.039
Nickel	7440-02-0	0.001	mg/L	0.014	0.013	0.003	0.003	0.002
Zinc	7440-66-6	0.005	mg/L	0.015	0.015	0.021	0.020	0.012
Iron	7439-89-6	0.05	mg/L	0.68	0.68	0.33	0.33	0.32
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	3.06	3.07	0.93	0.91	3.00
Cobalt	7440-48-4	0.001	mg/L	0.020	0.021	0.004	0.005	0.008

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	1.15	1.25	0.100	0.118	0.092
Iron	7439-89-6	0.05	mg/L	19.5	16.0	3.41	5.59	14.6
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	1.32	0.82	1.98	3.11	3.11
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.03	0.02	0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	1.52	1.92	1.94
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	1.55	1.94	1.95
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.8	5.2	3.4	5.5	4.0
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	2.8	5.2	5.0	7.4	6.0
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.08	<0.05	0.10	0.27	0.15
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	330	326	11.4	11.2	11.9
ø Total Cations	----	0.01	meq/L	305	308	11.4	11.4	10.7
ø Ionic Balance	----	0.01	%	3.90	2.86	0.33	0.93	5.50
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	5	7	10	10	10
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<5	<5	<5
Toluene	108-88-3	2	µg/L	<2	<2	<5	<5	<5
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<5	<5	<5
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<10	<10	<10
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<5	<5	<5
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	**120**	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	**11**	**10**	**11**
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	**14**	**1520**	**1450**	**1500**
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	**458**	**486**	**499**
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	**11**	**485**	**599**	**555**
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	**6**	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP074G: Trihalomethanes - Continued								
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	<2
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP075D: Nitrosamines - Continued								
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP075G: Chlorinated Hydrocarbons - Continued								
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	**30**	**2470**	**2660**	**2670**
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	**40**	**2740**	**2950**	**2960**
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	**40**	**2740**	**2950**	**2960**
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<5	<5	<5
Toluene	108-88-3	2	µg/L	<2	<2	<5	<5	<5
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<5	<5	<5
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<2	<2	<2
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	**0.73**	**0.64**	**0.81**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	**0.02**	**0.02**	**0.02**
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	**0.73**	**0.64**	**0.81**
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	**0.75**	**0.66**	**0.83**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**71.8**	**78.1**	**87.4**	**72.9**	**86.8**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**71.1**	**76.6**	**86.2**	**72.9**	**87.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1019rM	SBT-GW-1019rD	MW1-S	MW1-M	MW1-D
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-006	ES2244937-007	ES2244937-008	ES2244937-009	ES2244937-010
				Result	Result	Result	Result	Result
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	123	131	113	114	114
Toluene-D8	2037-26-5	5	%	102	110	102	106	102
4-Bromofluorobenzene	460-00-4	5	%	116	123	113	111	108
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	33.7	36.9	41.3	35.4	40.5
2-Chlorophenol-D4	93951-73-6	1.0	%	69.3	75.3	81.3	66.1	74.4
2.4.6-Tribromophenol	118-79-6	1.0	%	74.9	79.5	86.1	66.8	77.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	81.6	81.1	96.3	69.5	81.4
Anthracene-d10	1719-06-8	1.0	%	87.0	91.3	101	82.1	90.6
4-Terphenyl-d14	1718-51-0	1.0	%	91.6	94.1	104	87.3	96.8
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	47.0	54.4	58.5	43.5	55.0
Phenol-d6	13127-88-3	2	%	35.4	38.1	40.3	33.7	38.0
2-Chlorophenol-D4	93951-73-6	2	%	69.3	71.5	80.0	66.7	72.4
2.4.6-Tribromophenol	118-79-6	2	%	58.8	63.4	72.0	56.2	66.8
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	71.4	75.1	81.9	71.2	75.6
1.2-Dichlorobenzene-D4	2199-69-1	2	%	65.0	69.6	73.1	64.2	70.6
2-Fluorobiphenyl	321-60-8	2	%	63.9	64.6	74.8	63.4	68.6
Anthracene-d10	1719-06-8	2	%	77.1	81.9	93.2	75.4	83.1
4-Terphenyl-d14	1718-51-0	2	%	74.1	77.5	88.0	72.0	79.1
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	128	127	118	120	119
Toluene-D8	2037-26-5	2	%	98.0	105	98.0	102	97.3
4-Bromofluorobenzene	460-00-4	2	%	117	120	117	116	113
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	103	104	105	103	105
13C8-PFOA	----	0.02	%	102	102	102	101	99.9

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-GW02-S	SMGW-GW02-M	SMGW-GW02-D	QC7-121222-JP	RINSE-121222-JP
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-011	ES2244937-012	ES2244937-013	ES2244937-014	ES2244937-015
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.10	5.68	5.89	5.80	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	10300	11500	12100	11500	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	6560	6930	7560	7200	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	18	28	10	9	----
Total Alkalinity as CaCO3	----	1	mg/L	18	28	10	9	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	276	335	335	333	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	3730	4070	4320	4250	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	130	66	89	74	----
Magnesium	7439-95-4	1	mg/L	211	240	256	236	----
Sodium	7440-23-5	1	mg/L	1860	2220	2320	2110	----
Potassium	7440-09-7	1	mg/L	7	4	5	4	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.27	0.07	0.67	0.65	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.103	0.052	0.096	0.116	----
Copper	7440-50-8	0.001	mg/L	0.007	0.003	0.002	0.002	<0.001
Lead	7439-92-1	0.001	mg/L	0.003	<0.001	0.004	0.005	<0.001
Manganese	7439-96-5	0.001	mg/L	0.282	0.154	0.131	0.232	----
Nickel	7440-02-0	0.001	mg/L	0.038	0.020	0.032	0.040	<0.001
Zinc	7440-66-6	0.005	mg/L	0.112	0.091	0.119	0.125	<0.005
Iron	7439-89-6	0.05	mg/L	10.2	3.74	9.73	10.7	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	8.40	0.63	0.89	0.94	----
Cobalt	7440-48-4	0.001	mg/L	0.107	0.091	0.087	0.091	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-GW02-S	SMGW-GW02-M	SMGW-GW02-D	QC7-121222-JP	RINSE-121222-JP
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-011	ES2244937-012	ES2244937-013	ES2244937-014	ES2244937-015
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.267	0.168	0.239	0.243	----
Iron	7439-89-6	0.05	mg/L	42.7	8.84	11.0	11.6	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.10	0.09	0.09	0.14	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.64	0.63	0.24	0.24	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.64	0.63	0.24	0.24	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.2	1.6	1.0	0.9	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	1.8	2.2	1.2	1.1	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.21	0.10	0.23	0.23	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	111	122	129	127	----
ø Total Cations	----	0.01	meq/L	105	120	126	115	----
ø Ionic Balance	----	0.01	%	2.95	1.09	0.97	4.96	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	4	4	4	5	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
Styrene	100-42-5	5	µg/L	<5	<5	<5	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-GW02-S	SMGW-GW02-M	SMGW-GW02-D	QC7-121222-JP	RINSE-121222-JP
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-011	ES2244937-012	ES2244937-013	ES2244937-014	ES2244937-015
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	**12**	**13**	**11**	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-GW02-S	SMGW-GW02-M	SMGW-GW02-D	QC7-121222-JP	RINSE-121222-JP
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-011	ES2244937-012	ES2244937-013	ES2244937-014	ES2244937-015
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L	**12**	**12**	**8**	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L	**5**	**5**	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	----	----
Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	<5	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	<5	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----
EP080/071: Total Petroleum Hydrocarbons								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-GW02-S	SMGW-GW02-M	SMGW-GW02-D	QC7-121222-JP	RINSE-121222-JP
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-011	ES2244937-012	ES2244937-013	ES2244937-014	ES2244937-015
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C9 Fraction	----	20	µg/L	**30**	**40**	**30**	**30**	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	**40**	**40**	**30**	**30**	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	**40**	**40**	**30**	**30**	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.09**	**0.09**	**0.10**	----	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.02**	**0.02**	**0.02**	----	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	----	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.04**	**0.04**	**0.04**	----	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-GW02-S	SMGW-GW02-M	SMGW-GW02-D	QC7-121222-JP	RINSE-121222-JP
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-011	ES2244937-012	ES2244937-013	ES2244937-014	ES2244937-015
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.03	0.03	0.04	----	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.01	<0.01	----	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	----	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	----	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	----	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	----	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.02	0.02	----	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	0.20	0.19	0.20	----	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	87.7	68.6	68.5	76.4	69.8
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	87.2	69.2	69.2	77.2	66.1
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	117	122	116	123	118
Toluene-D8	2037-26-5	5	%	110	98.6	107	107	106
4-Bromofluorobenzene	460-00-4	5	%	115	112	109	107	107
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	41.6	35.6	35.4	38.7	33.4
2-Chlorophenol-D4	93951-73-6	1.0	%	82.2	66.1	66.8	74.0	47.9
2.4.6-Tribromophenol	118-79-6	1.0	%	84.6	61.0	61.2	76.4	35.4
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	94.6	74.2	75.3	92.5	74.0
Anthracene-d10	1719-06-8	1.0	%	98.4	80.5	78.5	85.5	78.6
4-Terphenyl-d14	1718-51-0	1.0	%	107	82.4	81.2	88.8	79.2
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	52.6	42.4	44.0	53.2	25.2
Phenol-d6	13127-88-3	2	%	39.6	30.7	31.3	36.6	30.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-GW02-S	SMGW-GW02-M	SMGW-GW02-D	QC7-121222-JP	RINSE-121222-JP
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-011	ES2244937-012	ES2244937-013	ES2244937-014	ES2244937-015
				Result	Result	Result	Result	Result
EP075S: Acid Extractable Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	2	%	77.0	59.7	60.6	68.6	48.6
2.4.6-Tribromophenol	118-79-6	2	%	63.7	52.3	49.7	55.6	29.8
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	84.0	64.0	66.1	71.0	69.2
1.2-Dichlorobenzene-D4	2199-69-1	2	%	73.6	60.3	59.6	68.8	63.9
2-Fluorobiphenyl	321-60-8	2	%	75.1	57.5	59.1	66.8	59.0
Anthracene-d10	1719-06-8	2	%	88.2	69.2	69.6	78.5	74.1
4-Terphenyl-d14	1718-51-0	2	%	82.7	65.7	64.4	73.6	68.2
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	123	118	121	129	124
Toluene-D8	2037-26-5	2	%	105	100	103	102	102
4-Bromofluorobenzene	460-00-4	2	%	119	113	112	115	114
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	110	104	114	----	117
13C8-PFOA	----	0.02	%	102	95.9	103	----	95.3

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	5.10	4.40	7.73	6.85	6.86
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	30000	9330	18400	20800	24100
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	19200	5590	13200	13600	15300
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	<1	486	88	103
Total Alkalinity as CaCO3	----	1	mg/L	2	<1	486	88	103
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	452	207	635	723	698
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	11800	3400	6630	7370	8790
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	69	1	243	48	52
Magnesium	7439-95-4	1	mg/L	985	174	724	563	651
Sodium	7440-23-5	1	mg/L	5280	1580	2980	4110	4460
Potassium	7440-09-7	1	mg/L	23	3	50	3	3
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	6.38	1.55	0.03	0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L	0.003	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	0.0018	<0.0001	0.0002	<0.0001	0.0001
Chromium	7440-47-3	0.001	mg/L	0.002	<0.001	<0.001	0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.894	0.107	0.005	0.154	0.298
Copper	7440-50-8	0.001	mg/L	0.034	0.012	<0.001	0.008	<0.001
Lead	7439-92-1	0.001	mg/L	0.016	0.006	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	5.49	0.017	0.412	8.69	18.8
Nickel	7440-02-0	0.001	mg/L	0.548	0.043	0.007	0.029	0.052
Zinc	7440-66-6	0.005	mg/L	1.43	0.135	0.044	0.084	0.064
Iron	7439-89-6	0.05	mg/L	1.01	<0.05	0.10	1.40	1.65
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	10.9	2.22	5.90	0.32	287
Cobalt	7440-48-4	0.001	mg/L	0.868	0.114	0.012	0.297	0.893

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	5.57	0.044	1.01	18.5	42.8
Iron	7439-89-6	0.05	mg/L	1.59	0.51	7.86	6.48	705
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.52	0.05	0.19	0.19	0.17
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.01	0.11	0.34	0.02	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.11	0.34	0.02	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.1	0.5	1.2	1.1	31.8
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	1.1	0.6	1.5	1.1	31.8
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.05	0.08	<0.05	0.10	21.6
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.02	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	342	100	210	225	264
ø Total Cations	----	0.01	meq/L	315	83.2	203	228	250
ø Ionic Balance	----	0.01	%	4.19	9.30	1.78	0.64	2.78
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	10	12	10	8	8
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	----	----	<0.5	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	----	<0.5	----
beta-BHC	319-85-7	0.5	µg/L	----	----	----	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L	----	----	----	<0.5	----
delta-BHC	319-86-8	0.5	µg/L	----	----	----	<0.5	----
Heptachlor	76-44-8	0.5	µg/L	----	----	----	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.5	µg/L	----	----	----	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----	----	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L	----	----	----	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----	----	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L	----	----	----	<0.5	----
Dieldrin	60-57-1	0.5	µg/L	----	----	----	<0.5	----
4.4`-DDE	72-55-9	0.5	µg/L	----	----	----	<0.5	----
Endrin	72-20-8	0.5	µg/L	----	----	----	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----	----	<0.5	----
4.4`-DDD	72-54-8	0.5	µg/L	----	----	----	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----	----	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----	----	<0.5	----
4.4`-DDT	50-29-3	2.0	µg/L	----	----	----	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L	----	----	----	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L	----	----	----	<2.0	----
^ Total Chlordane (sum)	----	0.5	µg/L	----	----	----	<0.5	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	----	----	<0.5	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	----	----	<0.5	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	----	----	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----	----	<0.5	----
Monocrotophos	6923-22-4	2.0	µg/L	----	----	----	<2.0	----
Dimethoate	60-51-5	0.5	µg/L	----	----	----	<0.5	----
Diazinon	333-41-5	0.5	µg/L	----	----	----	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----	----	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L	----	----	----	<2.0	----
Malathion	121-75-5	0.5	µg/L	----	----	----	<0.5	----
Fenthion	55-38-9	0.5	µg/L	----	----	----	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----	----	<0.5	----
Parathion	56-38-2	2.0	µg/L	----	----	----	<2.0	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	----	<0.5	----
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	----	<0.5	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	----	<0.5	----
Fenamiphos	22224-92-6	0.5	µg/L	----	----	----	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Prothiofos	34643-46-4	0.5	µg/L	----	----	----	<0.5	----
Ethion	563-12-2	0.5	µg/L	----	----	----	<0.5	----
Carbophenothion	786-19-6	0.5	µg/L	----	----	----	<0.5	----
Azinphos Methyl	86-50-0	0.5	µg/L	----	----	----	<0.5	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	----	----	<1	<1	----
Toluene	108-88-3	2	µg/L	----	----	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	----	----	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	----	<2	<2	----
Styrene	100-42-5	5	µg/L	----	----	<5	<5	----
ortho-Xylene	95-47-6	2	µg/L	----	----	<2	<2	----
Isopropylbenzene	98-82-8	5	µg/L	----	----	<5	<5	----
n-Propylbenzene	103-65-1	5	µg/L	----	----	<5	<5	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	----	----	<5	<5	----
sec-Butylbenzene	135-98-8	5	µg/L	----	----	<5	<5	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	----	----	<5	<5	----
tert-Butylbenzene	98-06-6	5	µg/L	----	----	<5	<5	----
p-Isopropyltoluene	99-87-6	5	µg/L	----	----	<5	<5	----
n-Butylbenzene	104-51-8	5	µg/L	----	----	<5	<5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	----	----	<50	<50	----
2-Butanone (MEK)	78-93-3	50	µg/L	----	----	<50	<50	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	----	----	<50	<50	----
2-Hexanone (MBK)	591-78-6	50	µg/L	----	----	<50	<50	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	----	<5	<5	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	----	<5	<5	----
1.2-Dichloropropane	78-87-5	5	µg/L	----	----	<5	<5	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	----	<5	<5	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	----	<5	<5	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	----	<5	<5	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	----	<50	<50	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Chloromethane	74-87-3	50	µg/L	----	----	<50	<50	----
Vinyl chloride	75-01-4	50	µg/L	----	----	<50	<50	----
Bromomethane	74-83-9	50	µg/L	----	----	<50	<50	----
Chloroethane	75-00-3	50	µg/L	----	----	<50	<50	----
Trichlorofluoromethane	75-69-4	50	µg/L	----	----	<50	<50	----
1.1-Dichloroethene	75-35-4	5	µg/L	----	----	<5	<5	----
Iodomethane	74-88-4	5	µg/L	----	----	<5	<5	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	----	<5	<5	----
1.1-Dichloroethane	75-34-3	5	µg/L	----	----	<5	<5	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	----	<5	<5	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	----	<5	<5	----
1.1-Dichloropropylene	563-58-6	5	µg/L	----	----	<5	<5	----
Carbon Tetrachloride	56-23-5	5	µg/L	----	----	<5	<5	----
1.2-Dichloroethane	107-06-2	5	µg/L	----	----	<5	<5	----
Trichloroethene	79-01-6	5	µg/L	----	----	<5	<5	----
Dibromomethane	74-95-3	5	µg/L	----	----	<5	<5	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	----	<5	<5	----
1.3-Dichloropropane	142-28-9	5	µg/L	----	----	<5	<5	----
Tetrachloroethene	127-18-4	5	µg/L	----	----	<5	<5	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	----	<5	<5	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	----	<5	<5	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	----	<5	<5	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	----	<5	<5	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	----	<5	<5	----
Pentachloroethane	76-01-7	5	µg/L	----	----	<5	<5	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	----	----	<5	<5	----
Hexachlorobutadiene	87-68-3	5	µg/L	----	----	<5	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	----	----	<5	<5	----
Bromobenzene	108-86-1	5	µg/L	----	----	<5	<5	----
2-Chlorotoluene	95-49-8	5	µg/L	----	----	<5	<5	----
4-Chlorotoluene	106-43-4	5	µg/L	----	----	<5	<5	----
1.3-Dichlorobenzene	541-73-1	5	µg/L	----	----	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L	----	----	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L	----	----	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
1.2.4-Trichlorobenzene	120-82-1	5	µg/L	----	----	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	----	----	<5	<5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	----	----	<5	<5	----
Bromodichloromethane	75-27-4	5	µg/L	----	----	<5	<5	----
Dibromochloromethane	124-48-1	5	µg/L	----	----	<5	<5	----
Bromoform	75-25-2	5	µg/L	----	----	<5	<5	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	µg/L	----	----	<5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	----	----	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L	----	----	----	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L	----	----	----	<1.0	----
Fluorene	86-73-7	1.0	µg/L	----	----	----	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L	----	----	----	<1.0	----
Anthracene	120-12-7	1.0	µg/L	----	----	----	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L	----	----	----	<1.0	----
Pyrene	129-00-0	1.0	µg/L	----	----	----	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L	----	----	----	<1.0	----
Chrysene	218-01-9	1.0	µg/L	----	----	----	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	----	----	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	----	----	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	----	----	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	----	----	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	----	----	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	----	<0.5	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	----	----	<2	----
2-Chlorophenol	95-57-8	2	µg/L	----	----	----	<2	----
2-Methylphenol	95-48-7	2	µg/L	----	----	----	<2	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	----	----	<4	----
2-Nitrophenol	88-75-5	2	µg/L	----	----	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
2.4-Dimethylphenol	105-67-9	2	µg/L	----	----	----	<2	----
2.4-Dichlorophenol	120-83-2	2	µg/L	----	----	----	<2	----
2.6-Dichlorophenol	87-65-0	2	µg/L	----	----	----	<2	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	----	----	<2	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	----	----	<2	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	----	----	<2	----
Pentachlorophenol	87-86-5	4	µg/L	----	----	----	<4	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	----	----	<2	----
2-Methylnaphthalene	91-57-6	2	µg/L	----	----	----	<2	----
2-Chloronaphthalene	91-58-7	2	µg/L	----	----	----	<2	----
Acenaphthylene	208-96-8	2	µg/L	----	----	----	<2	----
Acenaphthene	83-32-9	2	µg/L	----	----	----	<2	----
Fluorene	86-73-7	2	µg/L	----	----	----	<2	----
Phenanthrene	85-01-8	2	µg/L	----	----	----	<2	----
Anthracene	120-12-7	2	µg/L	----	----	----	<2	----
Fluoranthene	206-44-0	2	µg/L	----	----	----	<2	----
Pyrene	129-00-0	2	µg/L	----	----	----	<2	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	----	----	<2	----
Benz(a)anthracene	56-55-3	2	µg/L	----	----	----	<2	----
Chrysene	218-01-9	2	µg/L	----	----	----	<2	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	----	----	<4	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	----	----	<2	----
Benzo(a)pyrene	50-32-8	2	µg/L	----	----	----	<2	----
3-Methylcholanthrene	56-49-5	2	µg/L	----	----	----	<2	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	----	----	<2	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	----	----	<2	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	----	----	<2	----
^ Sum of PAHs	----	2	µg/L	----	----	----	<2	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	----	----	<2	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	----	----	<2	----
Diethyl phthalate	84-66-2	2	µg/L	----	----	----	<2	----
Di-n-butyl phthalate	84-74-2	2	µg/L	----	----	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued								
Butyl benzyl phthalate	85-68-7	2	µg/L	----	----	----	<2	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	----	----	<10	----
Di-n-octylphthalate	117-84-0	2	µg/L	----	----	----	<2	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	----	----	<2	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	----	----	<2	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	----	----	<4	----
N-Nitrosomorpholine	59-89-2	2	µg/L	----	----	----	<2	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	----	----	<2	----
N-Nitrosopiperidine	100-75-4	2	µg/L	----	----	----	<2	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	----	----	<2	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	----	----	<4	----
Methapyrilene	91-80-5	2	µg/L	----	----	----	<2	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	----	----	----	<2	----
Acetophenone	98-86-2	2	µg/L	----	----	----	<2	----
Nitrobenzene	98-95-3	2	µg/L	----	----	----	<2	----
Isophorone	78-59-1	2	µg/L	----	----	----	<2	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	----	----	<4	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	----	----	<4	----
1-Naphthylamine	134-32-7	2	µg/L	----	----	----	<2	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	----	----	<2	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	----	----	<2	----
Azobenzene	103-33-3	2	µg/L	----	----	----	<2	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	----	----	<2	----
Phenacetin	62-44-2	2	µg/L	----	----	----	<2	----
4-Aminobiphenyl	92-67-1	2	µg/L	----	----	----	<2	----
Pentachloronitrobenzene	82-68-8	2	µg/L	----	----	----	<2	----
Pronamide	23950-58-5	2	µg/L	----	----	----	<2	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	----	----	<2	----
Chlorobenzilate	510-15-6	2	µg/L	----	----	----	<2	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	----	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP075F: Haloethers - Continued								
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	----	----	<2	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	----	----	<2	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	----	----	<2	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	----	----	<2	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	----	----	<2	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	----	----	<2	----
Hexachloroethane	67-72-1	2	µg/L	----	----	----	<2	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	----	----	<2	----
Hexachloropropylene	1888-71-7	2	µg/L	----	----	----	<2	----
Hexachlorobutadiene	87-68-3	2	µg/L	----	----	----	<2	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	----	----	<10	----
Pentachlorobenzene	608-93-5	2	µg/L	----	----	----	<2	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	----	----	<4	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	----	----	----	<2	----
4-Chloroaniline	106-47-8	2	µg/L	----	----	----	<2	----
2-Nitroaniline	88-74-4	4	µg/L	----	----	----	<4	----
3-Nitroaniline	99-09-2	4	µg/L	----	----	----	<4	----
Dibenzofuran	132-64-9	2	µg/L	----	----	----	<2	----
4-Nitroaniline	100-01-6	2	µg/L	----	----	----	<2	----
Carbazole	86-74-8	2	µg/L	----	----	----	<2	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	----	----	<2	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	----	----	----	<2	----
beta-BHC	319-85-7	2	µg/L	----	----	----	<2	----
gamma-BHC	58-89-9	2	µg/L	----	----	----	<2	----
delta-BHC	319-86-8	2	µg/L	----	----	----	<2	----
Heptachlor	76-44-8	2	µg/L	----	----	----	<2	----
Aldrin	309-00-2	2	µg/L	----	----	----	<2	----
Heptachlor epoxide	1024-57-3	2	µg/L	----	----	----	<2	----
alpha-Endosulfan	959-98-8	2	µg/L	----	----	----	<2	----
4.4`-DDE	72-55-9	2	µg/L	----	----	----	<2	----
Dieldrin	60-57-1	2	µg/L	----	----	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
Endrin	72-20-8	2	µg/L	----	----	----	<2	----
beta-Endosulfan	33213-65-9	2	µg/L	----	----	----	<2	----
4.4`-DDD	72-54-8	2	µg/L	----	----	----	<2	----
Endosulfan sulfate	1031-07-8	2	µg/L	----	----	----	<2	----
4.4`-DDT	50-29-3	4	µg/L	----	----	----	<4	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	----	----	<4	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	----	----	<4	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	----	----	<2	----
Dimethoate	60-51-5	2	µg/L	----	----	----	<2	----
Diazinon	333-41-5	2	µg/L	----	----	----	<2	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	----	----	<2	----
Malathion	121-75-5	2	µg/L	----	----	----	<2	----
Fenthion	55-38-9	2	µg/L	----	----	----	<2	----
Chlorpyrifos	2921-88-2	2	µg/L	----	----	----	<2	----
Pirimphos-ethyl	23505-41-1	2	µg/L	----	----	----	<2	----
Chlorfenvinphos	470-90-6	2	µg/L	----	----	----	<2	----
Prothiofos	34643-46-4	2	µg/L	----	----	----	<2	----
Ethion	563-12-2	2	µg/L	----	----	----	<2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	----	----	----	<0.01	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	----
EP231P: PFAS Sums								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	<0.01	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	54.5	63.1	71.7	60.2	68.8
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	54.6	63.1	72.2	60.9	68.4
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	127	113	126	124	124
Toluene-D8	2037-26-5	5	%	119	111	125	113	103
4-Bromofluorobenzene	460-00-4	5	%	122	108	124	114	115
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	39.8	34.7	38.1	40.7	38.0
2-Chlorophenol-D4	93951-73-6	1.0	%	58.2	69.6	69.7	63.1	65.0
2.4.6-Tribromophenol	118-79-6	1.0	%	52.4	62.8	63.5	55.4	62.8
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	68.3	79.1	80.9	69.1	68.0
Anthracene-d10	1719-06-8	1.0	%	68.0	82.9	82.9	69.6	76.8
4-Terphenyl-d14	1718-51-0	1.0	%	67.8	79.9	82.4	70.6	79.4
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	47.5	44.3	51.5	49.9	49.3
Phenol-d6	13127-88-3	2	%	35.7	32.8	36.2	37.3	34.4
2-Chlorophenol-D4	93951-73-6	2	%	55.5	62.3	67.2	58.4	58.5
2.4.6-Tribromophenol	118-79-6	2	%	45.4	55.0	55.3	46.7	52.9
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	57.0	68.2	69.5	67.7	65.2
1.2-Dichlorobenzene-D4	2199-69-1	2	%	53.7	60.9	65.4	57.2	55.4
2-Fluorobiphenyl	321-60-8	2	%	53.8	59.4	65.6	54.8	53.0
Anthracene-d10	1719-06-8	2	%	60.3	70.7	75.9	64.1	71.5
4-Terphenyl-d14	1718-51-0	2	%	56.0	67.0	69.3	57.1	63.4
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	127	118	128	130	130
Toluene-D8	2037-26-5	2	%	114	107	126	109	99.2
4-Bromofluorobenzene	460-00-4	2	%	124	113	126	118	118

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1001	SBT-GW-1002	SBT-GW-1005	SBT-GW-1017A	SBT-GW-1017B
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00	12-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2244937-016	ES2244937-017	ES2244937-018	ES2244937-019	ES2244937-020
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	----	----	----	117	----
13C8-PFOA	----	0.02	%	----	----	----	94.9	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-A107	TRIP BLANK	----	----	----
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2244937-021	ES2244937-022	--------	--------	--------
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.84**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**576**	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**370**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**122**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**122**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**51**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**76**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**77**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**11**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**26**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**5**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.07**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.005**	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.679**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.008**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**0.31**	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.98**	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.003**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-A107	TRIP BLANK	----	----	----
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2244937-021	ES2244937-022	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	**0.571**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**2.42**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.14**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.01**	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.01**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.02**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**2.0**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**2.0**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.30**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	**0.02**	----	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**5.64**	----	----	----	----
ø Total Cations	----	0.01	meq/L	**6.01**	----	----	----	----
ø Ionic Balance	----	0.01	%	**3.12**	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**10**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-A107	TRIP BLANK	----	----	----
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2244937-021	ES2244937-022	--------	--------	--------
				Result	Result	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**59.1**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**59.1**	----	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**119**	----	----	----	----
Toluene-D8	2037-26-5	5	%	**114**	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	**113**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**27.6**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**54.7**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**50.8**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	**58.9**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	**67.3**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	**71.8**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-A107	TRIP BLANK	----	----	----
			Sampling date / time	12-Dec-2022 00:00	12-Dec-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2244937-021	ES2244937-022	--------	--------	--------
				Result	Result	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	19.7	----	----	----	----
Phenol-d6	13127-88-3	2	%	17.3	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	42.6	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	39.6	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	82.6	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	58.4	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	50.4	----	----	----	----
Anthracene-d10	1719-06-8	2	%	64.8	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	60.6	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	124	109	----	----	----
Toluene-D8	2037-26-5	2	%	122	106	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	124	106	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2244937**	Page	: 1 of 37
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: Level 3, 101 Sussex Street Sydney	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 12-Dec-2022
Order number	: ----	Date Analysis Commenced	: 13-Dec-2022
C-O-C number	: ----	Issue Date	: 23-Dec-2022
Sampler	: JP		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 22		
No. of samples analysed	: 22		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4769078)									
ES2244410-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.30	5.28	0.4	0% - 20%
ES2244937-005	SBT-GW-1019rS	EA005-P: pH Value	----	0.01	pH Unit	7.70	7.71	0.1	0% - 20%
EA005P: pH by PC Titrator (QC Lot: 4769083)									
ES2245294-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.78	6.73	0.7	0% - 20%
ES2244937-020	SBT-GW-1017B	EA005-P: pH Value	----	0.01	pH Unit	6.86	7.01	2.2	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4769080)									
ES2244881-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	482	484	0.4	0% - 20%
ES2244885-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	57	56	2.1	0% - 20%
ES2244886-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	460	458	0.5	0% - 20%
ES2244410-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	70000	70000	0.0	0% - 20%
ES2244937-020	SBT-GW-1017B	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	24100	24000	0.4	0% - 20%
ES2244937-005	SBT-GW-1019rS	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	24300	24400	0.4	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4773310)									
ES2244937-001	SBT-CM-1022	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	2760	2740	0.7	0% - 20%
ES2244937-011	SMGW-GW02-S	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	6560	6370	3.0	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4773311)									
ES2244937-021	SMGW-BH-A107	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	370	370	0.0	0% - 20%
ES2245142-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	622	596	4.4	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4769081)									
ES2244885-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	24	24	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	24	24	0.0	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED037P: Alkalinity by PC Titrator (QC Lot: 4769081) - continued									
ES2244886-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	43	39	9.6	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	43	39	9.6	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4769082)									
ES2244937-020	SBT-GW-1017B	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	103	91	12.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	103	91	12.0	0% - 20%
ES2244937-005	SBT-GW-1019rS	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	495	415	17.7	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	495	415	17.7	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4765680)									
ES2244937-001	SBT-CM-1022	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	702	702	0.0	0% - 20%
ES2244937-010	MW1-D	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	69	68	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4765676)									
ES2244844-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	30	30	0.0	0% - 20%
ES2244937-010	MW1-D	ED045G: Chloride	16887-00-6	1	mg/L	172	171	0.9	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4765683)									
WN2215697-005	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	472	448	5.3	0% - 20%
ES2244937-021	SMGW-BH-A107	ED045G: Chloride	16887-00-6	1	mg/L	76	78	3.3	No Limit
ED093F: Dissolved Major Cations (QC Lot: 4771491)									
ES2244881-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	43	45	4.1	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	22	22	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	25	26	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.0	No Limit
ES2244881-012	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	24	22	5.3	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	12	12	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	12	12	0.0	0% - 50%
		ED093F: Potassium	7440-09-7	1	mg/L	2	2	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 4771496)									
ES2244937-008	MW1-S	ED093F: Calcium	7440-70-2	1	mg/L	28	28	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	15	14	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	198	194	2.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.0	No Limit
ES2244937-018	SBT-GW-1005	ED093F: Calcium	7440-70-2	1	mg/L	243	242	0.5	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	724	719	0.7	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	2980	2910	2.1	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED093F: Dissolved Major Cations (QC Lot: 4771496) - continued									
ES2244937-018	SBT-GW-1005	ED093F: Potassium	7440-09-7	1	mg/L	50	50	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4771488)									
ES2244881-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.019	0.019	0.0	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.021	0.022	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2244881-012	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0003	0.0001	58.4	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.254	0.253	0.0	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.040	0.039	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.026	0.009	94.1	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.05	0.05	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.08	0.08	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4771492)									
ES2244937-008	MW1-S	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.026	0.026	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.021	0.022	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.33	0.33	0.0	No Limit
ES2244937-018	SBT-GW-1005	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0003	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.005	0.004	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4771492) - continued									
ES2244937-018	SBT-GW-1005	EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.412	0.406	1.6	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.007	0.006	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.044	0.042	3.5	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	<0.01	94.2	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.10	0.09	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4768426)									
ES2244937-001	SBT-CM-1022	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.034	0.034	0.0	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.380	0.357	6.0	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.98	1.98	0.0	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	3.17	3.09	2.5	0% - 20%
ES2244937-011	SMGW-GW02-S	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.107	0.107	0.0	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.267	0.262	1.8	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	42.7	43.1	0.9	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4768427)									
ES2244937-021	SMGW-BH-A107	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.571	0.591	3.5	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.98	1.19	20.0	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	2.42	2.64	8.6	0% - 20%
ES2245012-002	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.011	0.010	0.0	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4771487)									
ES2244881-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2244881-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4771495)									
ES2244937-009	MW1-M	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2244937-017	SBT-GW-1002	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4775154)									
ES2244937-001	SBT-CM-1022	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.14	0.0	0% - 50%
ES2244937-010	MW1-D	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	3.11	3.08	0.9	0% - 20%
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4775156)									
ES2244937-021	SMGW-BH-A107	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.14	7.4	0% - 50%
EW2205812-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4765679)									
ES2244937-001	SBT-CM-1022	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.05	0.03	51.0	No Limit
ES2244937-010	MW1-D	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4765681)									
EW2205793-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2244937-021	SMGW-BH-A107	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4775155)									
ES2244937-001	SBT-CM-1022	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.02	0.0	No Limit
ES2244937-010	MW1-D	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	1.95	1.97	1.0	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4775157)									
ES2244937-021	SMGW-BH-A107	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.0	No Limit
EW2205812-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.03	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4775151)									
ES2244937-001	SBT-CM-1022	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.6	0.2	84.9	No Limit
ES2244937-011	SMGW-GW02-S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.2	0.8	39.2	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4775153)									
ES2244937-021	SMGW-BH-A107	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.0	2.0	0.0	0% - 50%
ES2245059-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.3	1.3	0.0	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4775150)									
ES2244937-001	SBT-CM-1022	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.08	40.9	No Limit
ES2244937-011	SMGW-GW02-S	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.21	0.18	16.3	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4775152)									
ES2244937-021	SMGW-BH-A107	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.30	0.29	0.0	0% - 20%
ES2245059-002	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.06	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4765678)									
ES2244844-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.03	<0.01	97.5	No Limit
ES2244937-010	MW1-D	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4765682)									
ES2244937-021	SMGW-BH-A107	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	0.02	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4766663)									
ES2244787-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	6	3	79.3	No Limit
ES2244937-005	SBT-GW-1019rS	EP005: Total Organic Carbon	----	1	mg/L	4	6	37.8	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4766664)									
ES2244937-016	SBT-GW-1001	EP005: Total Organic Carbon	----	1	mg/L	10	15	38.4	0% - 50%
ES2244993-005	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	5	8	49.5	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4774029)									
ES2244937-001	SBT-CM-1022	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4774029) - continued									
ES2244937-001	SBT-CM-1022	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4774035)									
ES2244937-021	SMGW-BH-A107	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4774035) - continued									
ES2245059-005	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4774029)									
ES2244937-001	SBT-CM-1022	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4774035)									
ES2244937-021	SMGW-BH-A107	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2245059-005	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4774029)									
ES2244937-001	SBT-CM-1022	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4774035)									
ES2244937-021	SMGW-BH-A107	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2245059-005	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074D: Fumigants (QC Lot: 4774029)									
ES2244937-001	SBT-CM-1022	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4774035)									
ES2244937-021	SMGW-BH-A107	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2245059-005	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4774029)									
ES2244937-001	SBT-CM-1022	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4774029) - continued									
ES2244937-001	SBT-CM-1022	EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	12	12	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	12	12	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	5	5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4774035)									
ES2244937-021	SMGW-BH-A107	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4774035) - continued									
ES2244937-021	SMGW-BH-A107	EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2245059-005	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4774035) - continued									
ES2245059-005	Anonymous	EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4774029)									
ES2244937-001	SBT-CM-1022	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4774035)									
ES2244937-021	SMGW-BH-A107	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074F: Halogenated Aromatic Compounds (QC Lot: 4774035) - continued									
ES2244937-021	SMGW-BH-A107	EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2245059-005	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4774029)									
ES2244937-001	SBT-CM-1022	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4774035)									
ES2244937-021	SMGW-BH-A107	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2245059-005	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP074H: Naphthalene (QC Lot: 4774029)									
ES2244937-001	SBT-CM-1022	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP074H: Naphthalene (QC Lot: 4774035)									
ES2244937-021	SMGW-BH-A107	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2245059-005	Anonymous	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4774030)									
ES2244937-001	SBT-CM-1022	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4774030) - continued									
ES2244937-011	SMGW-GW02-S	EP080: C6 - C9 Fraction	----	20	µg/L	30	40	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4774034)									
ES2244937-021	SMGW-BH-A107	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2245059-005	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4774030)									
ES2244937-001	SBT-CM-1022	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	40	40	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4774034)									
ES2244937-021	SMGW-BH-A107	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2245059-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4774030)									
ES2244937-001	SBT-CM-1022	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2244937-011	SMGW-GW02-S	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP080: BTEXN (QC Lot: 4774034)									
ES2244937-021	SMGW-BH-A107	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2245059-005	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 4774034) - continued									
ES2245059-005	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4769078)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	101	98.8	101
				----	7 pH Unit	100	99.2	101
EA005P: pH by PC Titrator (QCLot: 4769083)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	101	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4769080)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	92.9	89.9	110
				<1	2100 µS/cm	96.7	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4773310)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	97.3	87.0	109
				<10	293 mg/L	103	75.2	126
				<10	2340 mg/L	103	83.0	124
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4773311)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	97.6	87.0	109
				<10	293 mg/L	102	75.2	126
				<10	2340 mg/L	107	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4769081)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	92.6	81.0	111
				----	50 mg/L	104	80.0	120
ED037P: Alkalinity by PC Titrator (QCLot: 4769082)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	85.6	81.0	111
				----	50 mg/L	98.9	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4765680)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	98.1	82.0	122
				<1	500 mg/L	103	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4765676)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	106	80.9	127
				<1	1000 mg/L	104	80.9	127
ED045G: Chloride by Discrete Analyser (QCLot: 4765683)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	105	80.9	127
				<1	1000 mg/L	105	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4771491)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	90.5	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	99.4	90.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED093F: Dissolved Major Cations (QCLot: 4771491) - continued								
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	100	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	103	85.0	113
ED093F: Dissolved Major Cations (QCLot: 4771496)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	103	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	110	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	106	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	105	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4771488)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	83.2	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	91.0	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	87.4	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	88.7	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	87.0	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	89.1	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.0	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	85.3	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.5	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.5	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	90.9	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4771492)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	88.0	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.4	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	91.0	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.0	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.7	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.6	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	93.1	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	100	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.2	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	92.8	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	91.4	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4768426)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	96.6	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	91.7	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.9	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.6	85.0	117
EG020T: Total Metals by ICP-MS (QCLot: 4768427)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	100	82.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 4768427) - continued								
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.6	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.5	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	106	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4771487)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.2	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4771495)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.2	83.0	105
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4775154)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	101	90.0	114
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4775156)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	100	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4765679)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	101	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4765681)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	101	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4775155)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	91.0	113
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4775157)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	101	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4775151)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	91.0	69.0	101
				<0.1	1 mg/L	111	70.0	118
				<0.1	5 mg/L	104	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4775153)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	89.0	69.0	101
				<0.1	1 mg/L	90.5	70.0	118
				<0.1	5 mg/L	94.1	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4775150)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	98.6	71.3	126
				<0.01	0.442 mg/L	102	71.3	126
				<0.01	1 mg/L	102	71.3	126
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4775152)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	76.8	71.3	126
				<0.01	0.442 mg/L	94.3	71.3	126
				<0.01	1 mg/L	105	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4765678)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	105	85.0	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4765682)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	103	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4766663)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	98.9	72.0	120
EP005: Total Organic Carbon (TOC) (QCLot: 4766664)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	97.3	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4773191)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	84.5	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	76.0	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	87.1	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	91.3	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	90.5	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	85.8	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	81.3	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	82.8	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	81.4	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	85.8	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	82.0	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	80.2	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	83.2	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	97.9	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	83.9	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	83.5	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	79.6	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	80.4	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	106	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	83.3	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	97.7	61.1	114
EP068A: Organochlorine Pesticides (OC) (QCLot: 4773226)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	78.0	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	75.3	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	81.1	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	86.0	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	84.3	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	80.7	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	78.1	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	80.9	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	78.3	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	83.0	66.7	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4773226) - continued								
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	79.8	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	78.7	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	80.1	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	82.5	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	83.4	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	80.8	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	78.1	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	82.8	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	107	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	91.9	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	105	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4773191)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	76.2	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	78.2	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.4	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	79.1	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	85.5	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	84.9	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	82.6	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	86.5	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	81.4	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	83.0	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	77.3	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	77.5	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	88.9	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	80.7	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	98.1	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	82.2	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	78.0	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	84.8	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	97.7	51.6	128
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4773226)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	79.6	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	83.6	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.7	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	74.5	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	84.4	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	81.6	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	78.4	70.0	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4773226) - continued								
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	81.6	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	78.7	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	80.8	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	81.9	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	78.8	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	81.4	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	79.1	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	89.8	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	79.8	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	79.5	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	89.0	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	94.2	51.6	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4774029)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.3	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	94.6	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.3	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	94.0	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	94.4	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	95.9	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	96.9	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	98.6	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	97.7	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	98.8	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	99.1	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	98.0	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	101	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	101	65.0	123
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4774035)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	95.8	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	99.2	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	99.1	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	99.3	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	99.2	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	96.5	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	92.5	74.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4774035) - continued								
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	95.1	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	94.9	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	93.9	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	93.7	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	95.2	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4774029)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	102	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	122	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	93.7	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	106	65.0	137
EP074B: Oxygenated Compounds (QCLot: 4774035)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	95.6	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	99.7	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	99.0	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	101	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4774029)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	105	72.8	127
EP074C: Sulfonated Compounds (QCLot: 4774035)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	91.5	72.8	127
EP074D: Fumigants (QCLot: 4774029)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	98.0	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	92.5	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	92.8	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	92.8	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	94.6	69.0	117
EP074D: Fumigants (QCLot: 4774035)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	96.5	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	101	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	96.7	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	93.7	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	102	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4774029)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	90.6	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	92.2	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	100	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	103	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	104	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	107	69.0	131

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4774029) - continued								
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	97.7	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	93.3	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	103	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	104	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	98.2	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	94.9	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	96.7	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	95.9	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	96.4	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	95.1	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	94.7	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	92.4	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	93.7	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	99.0	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	95.7	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	94.2	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	89.2	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	93.7	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	97.8	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	93.6	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	88.0	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	102	58.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4774035)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	101	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	99.0	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	95.6	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	99.6	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	97.8	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	98.3	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	92.0	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	97.8	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	92.9	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	90.8	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	95.7	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	96.3	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	97.2	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	93.2	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	102	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	94.0	76.0	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4774035) - continued								
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	97.0	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	106	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	103	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	102	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	96.1	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	94.9	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	108	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	106	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	103	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	89.6	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	97.1	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	101	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4774029)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	99.6	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	97.2	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	98.8	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	98.9	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	100	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	104	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	102	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	102	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	106	67.0	123
EP074F: Halogenated Aromatic Compounds (QCLot: 4774035)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	102	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	97.5	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	96.1	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	96.7	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	99.5	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	99.6	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	101	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	98.0	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	102	67.0	123
EP074G: Trihalomethanes (QCLot: 4774029)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	98.6	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	92.8	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	88.5	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	91.5	73.5	126
EP074G: Trihalomethanes (QCLot: 4774035)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP074G: Trihalomethanes (QCLot: 4774035) - continued								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	102	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	93.4	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	99.7	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	96.3	73.5	126
EP074H: Naphthalene (QCLot: 4774029)								
EP074: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	102	72.0	122
EP074H: Naphthalene (QCLot: 4774035)								
EP074: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	102	72.0	122
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4773189)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	80.3	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	76.0	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	77.0	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	84.4	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	84.5	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	78.9	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	77.1	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	79.9	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	91.3	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	83.4	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	109	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	84.5	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	87.8	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	87.8	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.3	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	81.6	59.1	118
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4773228)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	77.7	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	82.3	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	76.9	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	74.2	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	67.4	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	79.9	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	78.1	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	79.5	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	72.8	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	71.2	62.5	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4773228) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	73.6	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	71.6	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	73.2	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	66.2	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	66.8	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	70.4	59.1	118
EP075A: Phenolic Compounds (QCLot: 4773188)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	43.0	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	77.7	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	70.1	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	66.2	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	79.5	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	65.6	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	88.0	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	65.3	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	63.4	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	71.2	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	80.9	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	66.2	12.8	95.0
EP075A: Phenolic Compounds (QCLot: 4773229)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	41.2	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	70.9	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	60.5	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	54.8	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	77.1	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	69.3	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	74.1	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	81.2	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	81.7	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	94.8	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	98.3	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	43.5	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4773188)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	62.5	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	63.7	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	64.7	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	64.6	64.0	108

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4773188) - continued								
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	81.3	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	83.5	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	71.8	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	72.3	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	72.9	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	72.5	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	94.2	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	78.1	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	72.2	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	83.7	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	81.2	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	83.4	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	93.1	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	96.2	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	94.4	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	96.8	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4773229)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	69.4	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	76.8	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	85.3	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	107	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	69.4	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	81.8	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	89.9	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	93.5	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	95.0	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	109	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	87.9	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	92.6	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	110	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	87.0	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	91.0	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	94.5	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	93.0	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	90.9	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	93.7	57.2	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4773229) - continued								
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	86.2	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4773188)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	65.9	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	78.8	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	76.0	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	80.9	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	90.5	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	89.5	62.1	115
EP075C: Phthalate Esters (QCLot: 4773229)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	# 113	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	82.2	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	96.4	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	89.6	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	102	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	105	62.1	115
EP075D: Nitrosamines (QCLot: 4773188)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	46.3	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	78.0	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	57.0	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	56.4	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	82.2	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	80.7	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	66.8	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	84.9	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	75.0	23.3	125
EP075D: Nitrosamines (QCLot: 4773229)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	93.6	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	96.7	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	62.1	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	60.2	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	71.4	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	68.7	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	87.0	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	78.6	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	94.3	23.3	125

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 4773188)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	56.2	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	82.2	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	80.0	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	82.4	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	67.3	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	84.7	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	102	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	78.0	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	79.9	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	84.7	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	95.0	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	79.9	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	77.0	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	83.1	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	72.6	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	71.9	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	77.8	57.7	110
EP075E: Nitroaromatics and Ketones (QCLot: 4773229)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	69.7	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	69.1	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	# 67.2	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	71.5	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	# 116	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	90.0	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	90.3	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	95.0	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	90.0	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	84.7	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	77.3	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	60.0	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	78.1	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	95.0	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	97.4	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	78.6	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	101	57.7	110
EP075F: Haloethers (QCLot: 4773188)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	76.4	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	80.5	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	82.8	64.7	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075F: Haloethers (QCLot: 4773188) - continued								
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	83.0	61.6	108
EP075F: Haloethers (QCLot: 4773229)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	73.3	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	# 66.1	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	72.8	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	79.5	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4773188)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	75.1	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	78.0	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	75.7	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	72.4	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	77.0	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	57.5	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	57.6	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	65.2	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	79.7	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	83.6	65.7	110
EP075G: Chlorinated Hydrocarbons (QCLot: 4773229)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	68.9	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	71.2	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	70.6	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	76.8	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	67.8	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	82.4	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	86.4	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	107	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	71.9	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	85.5	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4773188)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	76.8	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	80.8	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	63.2	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	82.0	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	82.0	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	70.7	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	77.5	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	72.6	60.3	119
EP075H: Anilines and Benzidines (QCLot: 4773229)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075H: Anilines and Benzidines (QCLot: 4773229) - continued								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	74.7	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	75.3	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	106	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	83.1	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	74.4	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	85.9	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	102	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	85.6	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4773188)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	84.6	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	85.8	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	93.4	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	73.3	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	71.6	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	68.2	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	73.3	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	73.8	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	71.9	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	73.1	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	76.9	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	74.4	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	75.0	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	76.6	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	74.6	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075I: Organochlorine Pesticides (QCLot: 4773229)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	80.2	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	88.5	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	82.2	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	95.7	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	# 110	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	92.2	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	105	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	88.6	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	96.1	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	77.4	59.0	115

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075I: Organochlorine Pesticides (QCLot: 4773229) - continued								
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	96.9	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	96.0	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	90.9	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	91.3	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	87.9	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4773188)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	99.0	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	85.4	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	74.4	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	75.3	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	75.0	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	74.4	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	70.2	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	73.0	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	74.0	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	75.2	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	75.0	51.0	117
EP075J: Organophosphorus Pesticides (QCLot: 4773229)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	101	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	82.3	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	99.0	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	81.6	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	110	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	110	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	107	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	83.9	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	109	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	111	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	100	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4773190)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	68.8	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	99.9	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	96.5	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4773225)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4773225) - continued								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	67.5	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	77.7	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	63.9	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4774030)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	97.0	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4774034)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	111	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4773190)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	92.3	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	103	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	95.2	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4773225)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	63.3	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	62.8	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	57.4	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4774030)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	93.6	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4774034)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	115	75.0	127
EP080: BTEXN (QCLot: 4774030)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	94.0	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	92.0	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.2	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	103	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	102	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	102	70.0	120
EP080: BTEXN (QCLot: 4774034)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	98.2	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	106	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	109	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	110	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	107	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	94.0	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4773603)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	77.6	72.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4773603) - continued								
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	80.0	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	76.4	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4773603)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	84.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	84.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	84.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	78.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	79.6	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4773603)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	83.6	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	83.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	90.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	81.4	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4765680)							
ES2244937-001	SBT-CM-1022	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4765676)							
ES2244844-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	113	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4765683)							
ES2244937-021	SMGW-BH-A107	ED045G: Chloride	16887-00-6	500 mg/L	103	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4771488)							
ES2244881-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	103	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	97.6	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	99.5	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	99.8	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	# Not Determined	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	105	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	98.0	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4771488) - continued							
ES2244881-002	Anonymous	EG020A-F: Nickel	7440-02-0	1 mg/L	101	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	98.6	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4771492)							
ES2244937-009	MW1-M	EG020A-F: Arsenic	7440-38-2	1 mg/L	118	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	113	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	110	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	117	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	120	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	120	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	107	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	118	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	119	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4768426)							
ES2244937-002	SBT-CM-1020D	EG020A-T: Cobalt	7440-48-4	1 mg/L	95.2	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.2	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4768427)							
ES2245005-001	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	93.4	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.0	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4771487)							
ES2244881-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	90.3	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4771495)							
ES2244937-008	MW1-S	EG035F: Mercury	7439-97-6	0.01 mg/L	85.8	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4775154)							
ES2244937-001	SBT-CM-1022	EK055G: Ammonia as N	7664-41-7	1 mg/L	120	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4775156)							
ES2244937-021	SMGW-BH-A107	EK055G: Ammonia as N	7664-41-7	1 mg/L	112	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4765679)							
ES2244937-001	SBT-CM-1022	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	93.2	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4765681)							
ES2244937-021	SMGW-BH-A107	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	100	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4775155)							
ES2244937-001	SBT-CM-1022	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	112	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4775157)							
ES2244937-021	SMGW-BH-A107	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	106	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4775151)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4775151) - continued							
ES2244937-002	SBT-CM-1020D	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	86.9	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4775153)							
ES2245059-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	88.0	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4775150)							
ES2244937-002	SBT-CM-1020D	EK067G: Total Phosphorus as P	----	1 mg/L	100	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4775152)							
ES2245059-001	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	91.2	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4765678)							
ES2244844-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	100	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4765682)							
ES2244937-021	SMGW-BH-A107	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	99.5	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4766663)							
ES2244787-006	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	97.8	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4766664)							
ES2244937-017	SBT-GW-1002	EP005: Total Organic Carbon	----	100 mg/L	106	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4774029)							
ES2244937-001	SBT-CM-1022	EP074: Benzene	71-43-2	25 µg/L	85.0	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	83.3	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4774035)							
ES2244937-021	SMGW-BH-A107	EP074: Benzene	71-43-2	25 µg/L	115	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	107	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4774029)							
ES2244937-001	SBT-CM-1022	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	73.6	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	86.9	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4774035)							
ES2244937-021	SMGW-BH-A107	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	126	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	106	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4774029)							
ES2244937-001	SBT-CM-1022	EP074: Chlorobenzene	108-90-7	25 µg/L	87.2	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4774035)							
ES2244937-021	SMGW-BH-A107	EP074: Chlorobenzene	108-90-7	25 µg/L	97.8	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4774030)							
ES2244937-001	SBT-CM-1022	EP080: C6 - C9 Fraction	----	325 µg/L	102	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4774034)							
ES2244937-021	SMGW-BH-A107	EP080: C6 - C9 Fraction	----	325 µg/L	109	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4774030)							
ES2244937-001	SBT-CM-1022	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	103	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4774034)							
ES2244937-021	SMGW-BH-A107	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	109	70.0	130
EP080: BTEXN (QCLot: 4774030)							
ES2244937-001	SBT-CM-1022	EP080: Benzene	71-43-2	25 µg/L	98.0	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	82.4	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	105	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	102	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	110	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	107	70.0	130
EP080: BTEXN (QCLot: 4774034)							
ES2244937-021	SMGW-BH-A107	EP080: Benzene	71-43-2	25 µg/L	95.9	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	96.6	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	100	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	99.0	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.7	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	77.4	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2244937**	Page	: 1 of 22
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 12-Dec-2022
Site	: ----	Issue Date	: 23-Dec-2022
Sampler	: JP	No. of samples received	: 22
Order number	: ----	No. of samples analysed	: 22

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075C: Phthalate Esters	QC-4773229-002	----	**Dimethyl phthalate**	131-11-3	113 %	64.3-112%	**Recovery greater than upper control limit**
EP075E: Nitroaromatics and Ketones	QC-4773229-002	----	**Nitrobenzene**	98-95-3	67.2 %	68.3-112%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4773229-002	----	**2.6-Dinitrotoluene**	606-20-2	116 %	64.4-113%	**Recovery greater than upper control limit**
EP075F: Haloethers	QC-4773229-002	----	**Bis(2-chloroethoxy) methane**	111-91-1	66.1 %	66.2-111%	**Recovery less than lower control limit**
EP075I: Organochlorine Pesticides	QC-4773229-002	----	**Heptachlor**	76-44-8	110 %	57.9-108%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2244937--001	SBT-CM-1022	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG020F: Dissolved Metals by ICP-MS	ES2244881--002	Anonymous	**Copper**	7440-50-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2244937-001	SBT-CM-1022	**Dibromo-DDE**	21655-73-2	60.4 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2244937-002	SBT-CM-1020D	**Dibromo-DDE**	21655-73-2	65.4 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2244937-021	SMGW-BH-A107	**Dibromo-DDE**	21655-73-2	59.1 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2244937-016	SBT-GW-1001	**Dibromo-DDE**	21655-73-2	54.5 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2244937-017	SBT-GW-1002	**Dibromo-DDE**	21655-73-2	63.1 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2244937-019	SBT-GW-1017A	**Dibromo-DDE**	21655-73-2	60.2 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2244937-021	SMGW-BH-A107	**DEF**	78-48-8	59.1 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2244937-015	RINSE-121222-JP	**DEF**	78-48-8	66.1 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2244937-016	SBT-GW-1001	**DEF**	78-48-8	54.6 %	66.5-111 %	**Recovery less than lower data quality objective**

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted - Continued							
EP068T: Organophosphorus Pesticide Surrogate	ES2244937-017	SBT-GW-1002	**DEF**	78-48-8	63.1 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2244937-019	SBT-GW-1017A	**DEF**	78-48-8	60.9 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / **Container** / Client Sample ID(s)		*Extraction / Preparation* Date extracted	Due for extraction	Days overdue	*Analysis* Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
SBT-CM-1022,	SBT-CM-1020D,	----	----	----	15-Dec-2022	12-Dec-2022	**3**
SBT-CM-1020M,	SBT-CM-1020S,						
SBT-GW-1019rS,	SBT-GW-1019rM,						
SBT-GW-1019rD,	MW1-S,						
MW1-M,	MW1-D,						
SMGW-GW02-S,	SMGW-GW02-M,						
SMGW-GW02-D,	QC7-121222-JP,						
SBT-GW-1001,	SBT-GW-1002,						
SBT-GW-1005,	SBT-GW-1017A,						
SBT-GW-1017B,	SMGW-BH-A107						

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	32	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	23	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	25	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	40	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)					
Conductivity by Auto Titrator	4	56	7.14	8.33	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	32	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	23	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	25	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	40	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**15-Dec-2022**	12-Dec-2022	×
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**15-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**19-Dec-2022**	19-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**15-Dec-2022**	26-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**13-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**13-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**15-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**15-Dec-2022**	10-Jun-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
RINSE-121222-JP,	SBT-GW-1001,							
SBT-GW-1002,	SBT-GW-1005,							
SBT-GW-1017A,	SBT-GW-1017B,							
SMGW-BH-A107								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Natural (EG020A-T)								
SMGW-GW02-S,	SMGW-GW02-M	**12-Dec-2022**	**14-Dec-2022**	10-Jun-2023	✓	**14-Dec-2022**	10-Jun-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**14-Dec-2022**	10-Jun-2023	✓	**14-Dec-2022**	10-Jun-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**19-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
RINSE-121222-JP,	SBT-GW-1001,							
SBT-GW-1002,	SBT-GW-1005,							
SBT-GW-1017A,	SBT-GW-1017B,							
SMGW-BH-A107								
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**19-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**13-Dec-2022**	14-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**19-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**16-Dec-2022**	09-Jan-2023	✓	**18-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**16-Dec-2022**	09-Jan-2023	✓	**18-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**13-Dec-2022**	14-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							
EP005: Total Organic Carbon (TOC)								
Amber TOC Vial - Sulfuric Acid (EP005)								
SMGW-GW02-D,	QC7-121222-JP	**12-Dec-2022**	**----**	----	----	**14-Dec-2022**	09-Jan-2023	✓
Amber TOC Vial - Sulfuric Acid (EP005)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**----**	----	----	**15-Dec-2022**	09-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SBT-GW-1001,	SBT-GW-1002,							
SBT-GW-1005,	SBT-GW-1017A,							
SBT-GW-1017B,	SMGW-BH-A107							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SBT-GW-1017A	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**20-Dec-2022**	25-Jan-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SBT-GW-1017A	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**20-Dec-2022**	25-Jan-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-CM-1022, SBT-CM-1020D, SBT-CM-1020M, SBT-CM-1020S, SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SMGW-GW02-S, SMGW-GW02-M, SMGW-GW02-D, SBT-GW-1005, SBT-GW-1017A	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-CM-1022, SBT-CM-1020D, SBT-CM-1020M, SBT-CM-1020S, SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SMGW-GW02-S, SMGW-GW02-M, SMGW-GW02-D, SBT-GW-1005, SBT-GW-1017A	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-CM-1022, SBT-CM-1020D, SBT-CM-1020M, SBT-CM-1020S, SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SMGW-GW02-S, SMGW-GW02-M, SMGW-GW02-D, SBT-GW-1005, SBT-GW-1017A	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	SBT-GW-1005,							
SBT-GW-1017A								
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	SBT-GW-1005,							
SBT-GW-1017A								
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	SBT-GW-1005,							
SBT-GW-1017A								
EP074G: Trihalomethanes								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	SBT-GW-1005,							
SBT-GW-1017A								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074H: Naphthalene								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	SBT-GW-1005							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**19-Dec-2022**	25-Jan-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SBT-GW-1017A								
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SBT-GW-1017A								
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SBT-GW-1017A								
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SBT-GW-1017A								
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SBT-GW-1017A								
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SBT-GW-1017A								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SBT-GW-1017A	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SBT-GW-1017A	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SBT-GW-1017A	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SBT-GW-1017A	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1019rS, SBT-GW-1019rM, SBT-GW-1019rD, MW1-S, MW1-M, MW1-D, SBT-GW-1017A	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	25-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**18-Dec-2022**	25-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
RINSE-121222-JP,	SBT-GW-1001,							
SBT-GW-1002,	SBT-GW-1005,							
SBT-GW-1017A,	SBT-GW-1017B,							
SMGW-BH-A107								
Amber VOC Vial - Sulfuric Acid (EP080)								
SMGW-BH-A107,	TRIP BLANK	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**20-Dec-2022**	26-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
RINSE-121222-JP,	SBT-GW-1001,							
SBT-GW-1002,	SBT-GW-1005,							
SBT-GW-1017A,	SBT-GW-1017B							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**16-Dec-2022**	19-Dec-2022	✓	**18-Dec-2022**	25-Jan-2023	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
RINSE-121222-JP,	SBT-GW-1001,							
SBT-GW-1002,	SBT-GW-1005,							
SBT-GW-1017A,	SBT-GW-1017B,							
SMGW-BH-A107								
Amber VOC Vial - Sulfuric Acid (EP080)								
SMGW-BH-A107,	TRIP BLANK	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**20-Dec-2022**	26-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
RINSE-121222-JP,	SBT-GW-1001,							
SBT-GW-1002,	SBT-GW-1005,							
SBT-GW-1017A,	SBT-GW-1017B							
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SMGW-BH-A107,	TRIP BLANK	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**20-Dec-2022**	26-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-CM-1022,	SBT-CM-1020D,	**12-Dec-2022**	**19-Dec-2022**	26-Dec-2022	✓	**21-Dec-2022**	26-Dec-2022	✓
SBT-CM-1020M,	SBT-CM-1020S,							
SBT-GW-1019rS,	SBT-GW-1019rM,							
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	QC7-121222-JP,							
RINSE-121222-JP,	SBT-GW-1001,							
SBT-GW-1002,	SBT-GW-1005,							
SBT-GW-1017A,	SBT-GW-1017B							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**17-Dec-2022**	10-Jun-2023	✓	**20-Dec-2022**	10-Jun-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	RINSE-121222-JP,							
SBT-GW-1017A								
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**17-Dec-2022**	10-Jun-2023	✓	**20-Dec-2022**	10-Jun-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	RINSE-121222-JP,							
SBT-GW-1017A								
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**17-Dec-2022**	10-Jun-2023	✓	**20-Dec-2022**	10-Jun-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	RINSE-121222-JP,							
SBT-GW-1017A								
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT-GW-1019rS,	SBT-GW-1019rM,	**12-Dec-2022**	**17-Dec-2022**	10-Jun-2023	✓	**20-Dec-2022**	10-Jun-2023	✓
SBT-GW-1019rD,	MW1-S,							
MW1-M,	MW1-D,							
SMGW-GW02-S,	SMGW-GW02-M,							
SMGW-GW02-D,	RINSE-121222-JP,							
SBT-GW-1017A								

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	4	28	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	35	11.43	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	6	56	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	34	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	38	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	32	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	23	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	4	32	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	20	15.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	25	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	4	31	12.90	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	40	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	35	11.43	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	4	38	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	35	11.43	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	56	7.14	8.33	×	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	38	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Pesticides by GCMS	EP068	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	4	32	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	39	**15.38**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	6	31	**19.35**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	6	39	**15.38**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	56	**1.79**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	32	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	23	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	25	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	40	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 9223

coffey

Consigning Office:

Report Results to: emma stephens email Mobile: emma.stephens@eratech.com Email: jack.flanagan@eratech.com

Invoices to: general.admin@eratech.com Phone: casey.dare@eratech.com Email: esdat_labreports@coffey.com

Project No: 292575-4 Task No:

Project Name: WSA-SBT Laboratory: ALS

Sampler's Name: JP Project Manager: EMMA STEPHENS

Special Instructions: PLEASE FORWARD QC8-121222-JP TO EUROFINS

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline monitoring Sample	Baseline monitoring Inside	NOTES
1	SBT-CM-1022	12/12/22		W	bottles	STD	X		
2	SBT-CM-1020D						X		
3	SBT-CM-1020M						X		
4	SBT-CM-1020S						X		
5	SBT-GW-1019rS						X		
6	SBT-GW-1019rM						X		
7	SBT-GW-1019rD						X		
8	MW1-S						X		
9	MW1-M						X		
10	MW1-D						X		
11	SMGW-GW02-S						X		
12	SMGW-GW02-M						X		
13	SMGW-GW02-D						X		
14	QC7-121222-JP						X		
15	QC8-121222-JP						X		
16	RINSE-121222-JP							X	

HT

Environmental Division Sydney
Work Order Reference
ES2244937

Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jorja Pendlebury	Date: 12/12/22	Name: [illegible]	Date: 12/12/22
Coffey Environments	Time: 4 pm	Company: AL	Time: 1930
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
17	SBT-GW-1001	12/12/22	AM	Water	Bottles	Std (5-day)	X													
18	SBT-GW-1002	↓	↓	Water	Bottles	Std (5-day)	X													
19	SBT-GW-1005			Water	Bottles	Std (5-day)	X													
20	SBT-GW-1017A			Water	Bottles	Std (5-day)	X													
21	SBT-GW-1017B			Water	Bottles	Std (5-day)	X													
22	SMGW-BH-A107			Water	Bottles	Std (5-day)	X													
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

RELINQUISHED BY		RECEIVED BY	
Name: Terry XU	Date: 12/12/22	Name: J G	Date: 12/12/22
Coffey	Time: 4pm	Company: AU	Time: 1930
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 9223

coffey

Consigning Office:
Report Results to: emma stephens email Mobile: emmastephens@terratech.com Email: jack.flanagan@terratech.com @coffey.com
Invoices to: general.admin@terratech.com Phone: casey.ofarrel@terratech.com Email: esdat_labreports @coffey.com

Project No: 292575-4 Task No:
Project Name: WSA-SBT Laboratory: ALS
Sampler's Name: JP Project Manager: EMMA STEPHENS
Special Instructions: PLEASE FORWARD QC8-121222-JP TO EUROFINS
Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Subcon / Forward Lab / Split WO
Lab / Analysis: Eurofins - QC8-12222-JP
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

NOTES

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring extended suite	Baseline Monitoring rinsate
1	SBT-CM-1022	12/12/22		W	bottles	STD	X	
2	SBT-CM-1020D						X	
3	SBT-CM-1020M						X	
4	SBT-CM-1020S						X	
5	SBT-GW-1019rS						X	
6	SBT-GW-1019rM						X	
7	SBT-GW-1019rD						X	
8	MW1-S						X	
9	MW1-M						X	
10	MW1-D						X	
11	SMGW-GW02-S						X	
12	SMGW-GW02-M						X	
13	SMGW-GW02-D						X	
14	QC7-121222-JP						X	
~~15~~	QC8-121222-JP						X	
15	RINSE-121222-JP							X

HT

Environmental Division
Sydney
Work Order Reference
ES2244937
Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jorja Pendlebury	Date: 12/12/22	Name: JC	Date: 12/12/22
Coffey Environments	Time: 4 pm	Company: AL	Time: 1930
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
16	SBT-GW-1001	12/12/22	AM	Water	Bottles	Std (5-day)	X													
17	SBT-GW-1002	↓	↓	Water	Bottles	Std (5-day)	X													
18	SBT-GW-1005			Water	Bottles	Std (5-day)	X													
19	SBT-GW-1017A			Water	Bottles	Std (5-day)	X													
20	SBT-GW-1017B			Water	Bottles	Std (5-day)	X													
21	SMGW-BH-A107			Water	Bottles	Std (5-day)	X													
22	TRIP BLANK			Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

RELINQUISHED BY		RECEIVED BY	
Name: Terry XU	Date: 12/12/22	Name: JG	Date: 12/12/22
Coffey	Time: 4pm	Company: AU	Time: 19:30
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2245132**	Page	: 1 of 34
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 13-Dec-2022 17:20
Order number	: ----	Date Analysis Commenced	: 13-Dec-2022
C-O-C number	: 9224	Issue Date	: 23-Dec-2022 10:40
Sampler	: JP + KT + TX		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 18		
No. of samples analysed	: 16		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: It has been confirmed by re-digestion and re-analysis that dissolved concentration of some elements is higher than total concentration for sample ES2245132-016. For all other elements where filtered results are greater than total results, the difference is within experimental variation of the methods.
- EP074&EP080: Result for ES2245132-14 has been confirmed by re-analysis.
- EK067G: LOR raised for TP due to sample matrix #3
- It has been noted that Nitrite is greater than NOx, however this difference is within the limits of experimental variation #5 and #8
- It has been noted that Ammonia is greater than TKN, however this difference is within the limits of experimental variation #7
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- It has been noted that Nitrite is greater than NOx for sample 3, however this difference has been confrimed by reanalysis
- EK057G: It has been noted that NO2 is greater than NOX on sample 8(Confirmed by re-analysis)
- EN055: Ionic Balance out of acceptable limits for sample ES2245132-#004 due to analytes not quantified in this report.
- EP075(SIM): Particular sample phenolic surrogate not determined due to matrix interferences.

- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.95	7.92	7.94	9.62	8.06
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	21600	20700	23400	648	14000
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	15100	13900	16200	472	8830
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	45	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	48	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	953	804	882	<1	1020
Total Alkalinity as CaCO3	----	1	mg/L	953	804	882	93	1020
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	860	541	892	120	496
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	7450	7170	7860	75	4540
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	226	260	194	50	178
Magnesium	7439-95-4	1	mg/L	989	523	859	9	398
Sodium	7440-23-5	1	mg/L	3350	3120	3860	95	2380
Potassium	7440-09-7	1	mg/L	34	12	22	63	35
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	0.60	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	0.005
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	0.008	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.002	0.006	0.006	<0.001	0.004
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	<0.001	0.006	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	0.328	1.84	0.191	0.006	0.220
Nickel	7440-02-0	0.001	mg/L	0.004	0.004	0.009	0.001	0.005
Zinc	7440-66-6	0.005	mg/L	0.026	0.018	0.007	0.021	<0.005
Iron	7439-89-6	0.05	mg/L	0.06	3.04	<0.05	<0.05	0.24
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.55	8.94	0.39	7.97	1.11
Cobalt	7440-48-4	0.001	mg/L	0.004	0.012	0.008	0.005	0.004

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.576	1.97	0.202	0.163	0.243
Iron	7439-89-6	0.05	mg/L	1.40	24.4	0.95	8.16	4.05
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	----	----	----	<0.01	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	----	----	----	<0.01	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.25	0.63	0.60	0.65	1.08
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.02	<0.01	0.76	0.98	0.02
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.04	0.03	<0.01	1.12	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.06	0.03	0.58	2.10	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.7	3.3	0.8	2.6	1.3
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	0.8	3.3	1.4	4.7	1.3
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.10	1.29	<0.05	0.34	0.06
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	247	230	258	6.47	159
ø Total Cations	----	0.01	meq/L	239	192	249	8.98	146
ø Ionic Balance	----	0.01	%	1.61	8.90	1.79	16.2	4.17
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	9	6	18	7	7
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	----	----	<0.5	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	----	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	----	----	----	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L	----	----	----	<0.5	----
delta-BHC	319-86-8	0.5	µg/L	----	----	----	<0.5	----
Heptachlor	76-44-8	0.5	µg/L	----	----	----	<0.5	----
Aldrin	309-00-2	0.5	µg/L	----	----	----	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----	----	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L	----	----	----	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----	----	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L	----	----	----	<0.5	----
Dieldrin	60-57-1	0.5	µg/L	----	----	----	<0.5	----
4.4`-DDE	72-55-9	0.5	µg/L	----	----	----	<0.5	----
Endrin	72-20-8	0.5	µg/L	----	----	----	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----	----	<0.5	----
4.4`-DDD	72-54-8	0.5	µg/L	----	----	----	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----	----	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----	----	<0.5	----
4.4`-DDT	50-29-3	2.0	µg/L	----	----	----	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L	----	----	----	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L	----	----	----	<2.0	----
^ Total Chlordane (sum)	----	0.5	µg/L	----	----	----	<0.5	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	----	----	<0.5	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	----	----	<0.5	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	----	----	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----	----	<0.5	----
Monocrotophos	6923-22-4	2.0	µg/L	----	----	----	<2.0	----
Dimethoate	60-51-5	0.5	µg/L	----	----	----	<0.5	----
Diazinon	333-41-5	0.5	µg/L	----	----	----	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----	----	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L	----	----	----	<2.0	----
Malathion	121-75-5	0.5	µg/L	----	----	----	<0.5	----
Fenthion	55-38-9	0.5	µg/L	----	----	----	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----	----	<0.5	----
Parathion	56-38-2	2.0	µg/L	----	----	----	<2.0	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	----	<0.5	----
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	----	<0.5	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	----	<0.5	----
Fenamiphos	22224-92-6	0.5	µg/L	----	----	----	<0.5	----
Prothiofos	34643-46-4	0.5	µg/L	----	----	----	<0.5	----
Ethion	563-12-2	0.5	µg/L	----	----	----	<0.5	----
Carbophenothion	786-19-6	0.5	µg/L	----	----	----	<0.5	----
Azinphos Methyl	86-50-0	0.5	µg/L	----	----	----	<0.5	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	----	----	----	<1	----
Toluene	108-88-3	2	µg/L	----	----	----	<2	----
Ethylbenzene	100-41-4	2	µg/L	----	----	----	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	----	----	<2	----
Styrene	100-42-5	5	µg/L	----	----	----	<5	----
ortho-Xylene	95-47-6	2	µg/L	----	----	----	<2	----
Isopropylbenzene	98-82-8	5	µg/L	----	----	----	<5	----
n-Propylbenzene	103-65-1	5	µg/L	----	----	----	<5	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	----	----	----	<5	----
sec-Butylbenzene	135-98-8	5	µg/L	----	----	----	<5	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	----	----	----	<5	----
tert-Butylbenzene	98-06-6	5	µg/L	----	----	----	<5	----
p-Isopropyltoluene	99-87-6	5	µg/L	----	----	----	<5	----
n-Butylbenzene	104-51-8	5	µg/L	----	----	----	<5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	----	----	----	<50	----
2-Butanone (MEK)	78-93-3	50	µg/L	----	----	----	<50	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	----	----	----	<50	----
2-Hexanone (MBK)	591-78-6	50	µg/L	----	----	----	<50	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	----	----	<5	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	----	----	<5	----
1.2-Dichloropropane	78-87-5	5	µg/L	----	----	----	<5	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	----	----	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP074D: Fumigants - Continued								
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	----	----	<5	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	----	----	<5	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	----	----	<50	----
Chloromethane	74-87-3	50	µg/L	----	----	----	<50	----
Vinyl chloride	75-01-4	50	µg/L	----	----	----	<50	----
Bromomethane	74-83-9	50	µg/L	----	----	----	<50	----
Chloroethane	75-00-3	50	µg/L	----	----	----	<50	----
Trichlorofluoromethane	75-69-4	50	µg/L	----	----	----	<50	----
1.1-Dichloroethene	75-35-4	5	µg/L	----	----	----	<5	----
Iodomethane	74-88-4	5	µg/L	----	----	----	<5	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	----	----	<5	----
1.1-Dichloroethane	75-34-3	5	µg/L	----	----	----	<5	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	----	----	<5	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	----	----	<5	----
1.1-Dichloropropylene	563-58-6	5	µg/L	----	----	----	<5	----
Carbon Tetrachloride	56-23-5	5	µg/L	----	----	----	<5	----
1.2-Dichloroethane	107-06-2	5	µg/L	----	----	----	<5	----
Trichloroethene	79-01-6	5	µg/L	----	----	----	<5	----
Dibromomethane	74-95-3	5	µg/L	----	----	----	<5	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	----	----	<5	----
1.3-Dichloropropane	142-28-9	5	µg/L	----	----	----	<5	----
Tetrachloroethene	127-18-4	5	µg/L	----	----	----	<5	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	----	----	<5	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	----	----	<5	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	----	----	<5	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	----	----	<5	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	----	----	<5	----
Pentachloroethane	76-01-7	5	µg/L	----	----	----	<5	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	----	----	----	<5	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	----	----	----	<5	----
Bromobenzene	108-86-1	5	µg/L	----	----	----	<5	----
2-Chlorotoluene	95-49-8	5	µg/L	----	----	----	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
4-Chlorotoluene	106-43-4	5	µg/L	----	----	----	<5	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	----	----	----	<5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	----	----	----	<5	----
Bromodichloromethane	75-27-4	5	µg/L	----	----	----	<5	----
Dibromochloromethane	124-48-1	5	µg/L	----	----	----	<5	----
Bromoform	75-25-2	5	µg/L	----	----	----	<5	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	----	----	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L	----	----	----	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L	----	----	----	<1.0	----
Fluorene	86-73-7	1.0	µg/L	----	----	----	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L	----	----	----	<1.0	----
Anthracene	120-12-7	1.0	µg/L	----	----	----	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L	----	----	----	<1.0	----
Pyrene	129-00-0	1.0	µg/L	----	----	----	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L	----	----	----	<1.0	----
Chrysene	218-01-9	1.0	µg/L	----	----	----	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	----	----	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	----	----	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	----	----	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	----	----	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	----	----	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	----	<0.5	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	----	----	<2	----
2-Chlorophenol	95-57-8	2	µg/L	----	----	----	<2	----
2-Methylphenol	95-48-7	2	µg/L	----	----	----	<2	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	----	----	<4	----
2-Nitrophenol	88-75-5	2	µg/L	----	----	----	<2	----
2.4-Dimethylphenol	105-67-9	2	µg/L	----	----	----	<2	----
2.4-Dichlorophenol	120-83-2	2	µg/L	----	----	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
2.6-Dichlorophenol	87-65-0	2	µg/L	----	----	----	<2	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	----	----	<2	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	----	----	<2	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	----	----	<2	----
Pentachlorophenol	87-86-5	4	µg/L	----	----	----	<4	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	----	----	<2	----
2-Methylnaphthalene	91-57-6	2	µg/L	----	----	----	<2	----
2-Chloronaphthalene	91-58-7	2	µg/L	----	----	----	<2	----
Acenaphthylene	208-96-8	2	µg/L	----	----	----	<2	----
Acenaphthene	83-32-9	2	µg/L	----	----	----	<2	----
Fluorene	86-73-7	2	µg/L	----	----	----	<2	----
Phenanthrene	85-01-8	2	µg/L	----	----	----	<2	----
Anthracene	120-12-7	2	µg/L	----	----	----	<2	----
Fluoranthene	206-44-0	2	µg/L	----	----	----	<2	----
Pyrene	129-00-0	2	µg/L	----	----	----	<2	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	----	----	<2	----
Benz(a)anthracene	56-55-3	2	µg/L	----	----	----	<2	----
Chrysene	218-01-9	2	µg/L	----	----	----	<2	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	----	----	<4	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	----	----	<2	----
Benzo(a)pyrene	50-32-8	2	µg/L	----	----	----	<2	----
3-Methylcholanthrene	56-49-5	2	µg/L	----	----	----	<2	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	----	----	<2	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	----	----	<2	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	----	----	<2	----
^ Sum of PAHs	----	2	µg/L	----	----	----	<2	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	----	----	<2	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	----	----	<2	----
Diethyl phthalate	84-66-2	2	µg/L	----	----	----	<2	----
Di-n-butyl phthalate	84-74-2	2	µg/L	----	----	----	<2	----
Butyl benzyl phthalate	85-68-7	2	µg/L	----	----	----	<2	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	----	----	<10	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued								
Di-n-octylphthalate	117-84-0	2	µg/L	----	----	----	<2	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	----	----	<2	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	----	----	<2	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	----	----	<4	----
N-Nitrosomorpholine	59-89-2	2	µg/L	----	----	----	<2	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	----	----	<2	----
N-Nitrosopiperidine	100-75-4	2	µg/L	----	----	----	<2	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	----	----	<2	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	----	----	<4	----
Methapyrilene	91-80-5	2	µg/L	----	----	----	<2	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	----	----	----	<2	----
Acetophenone	98-86-2	2	µg/L	----	----	----	<2	----
Nitrobenzene	98-95-3	2	µg/L	----	----	----	<2	----
Isophorone	78-59-1	2	µg/L	----	----	----	<2	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	----	----	<4	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	----	----	<4	----
1-Naphthylamine	134-32-7	2	µg/L	----	----	----	<2	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	----	----	<2	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	----	----	<2	----
Azobenzene	103-33-3	2	µg/L	----	----	----	<2	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	----	----	<2	----
Phenacetin	62-44-2	2	µg/L	----	----	----	<2	----
4-Aminobiphenyl	92-67-1	2	µg/L	----	----	----	<2	----
Pentachloronitrobenzene	82-68-8	2	µg/L	----	----	----	<2	----
Pronamide	23950-58-5	2	µg/L	----	----	----	<2	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	----	----	<2	----
Chlorobenzilate	510-15-6	2	µg/L	----	----	----	<2	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	----	----	<2	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	----	----	<2	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	----	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP075F: Haloethers - Continued								
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	----	----	<2	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	----	----	<2	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	----	----	<2	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	----	----	<2	----
Hexachloroethane	67-72-1	2	µg/L	----	----	----	<2	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	----	----	<2	----
Hexachloropropylene	1888-71-7	2	µg/L	----	----	----	<2	----
Hexachlorobutadiene	87-68-3	2	µg/L	----	----	----	<2	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	----	----	<10	----
Pentachlorobenzene	608-93-5	2	µg/L	----	----	----	<2	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	----	----	<4	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	----	----	----	<2	----
4-Chloroaniline	106-47-8	2	µg/L	----	----	----	<2	----
2-Nitroaniline	88-74-4	4	µg/L	----	----	----	<4	----
3-Nitroaniline	99-09-2	4	µg/L	----	----	----	<4	----
Dibenzofuran	132-64-9	2	µg/L	----	----	----	<2	----
4-Nitroaniline	100-01-6	2	µg/L	----	----	----	<2	----
Carbazole	86-74-8	2	µg/L	----	----	----	<2	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	----	----	<2	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	----	----	----	<2	----
beta-BHC	319-85-7	2	µg/L	----	----	----	<2	----
gamma-BHC	58-89-9	2	µg/L	----	----	----	<2	----
delta-BHC	319-86-8	2	µg/L	----	----	----	<2	----
Heptachlor	76-44-8	2	µg/L	----	----	----	<2	----
Aldrin	309-00-2	2	µg/L	----	----	----	<2	----
Heptachlor epoxide	1024-57-3	2	µg/L	----	----	----	<2	----
alpha-Endosulfan	959-98-8	2	µg/L	----	----	----	<2	----
4.4`-DDE	72-55-9	2	µg/L	----	----	----	<2	----
Dieldrin	60-57-1	2	µg/L	----	----	----	<2	----
Endrin	72-20-8	2	µg/L	----	----	----	<2	----
beta-Endosulfan	33213-65-9	2	µg/L	----	----	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
4.4`-DDD	72-54-8	2	µg/L	----	----	----	<2	----
Endosulfan sulfate	1031-07-8	2	µg/L	----	----	----	<2	----
4.4`-DDT	50-29-3	4	µg/L	----	----	----	<4	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	----	----	<4	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	----	----	<4	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	----	----	<2	----
Dimethoate	60-51-5	2	µg/L	----	----	----	<2	----
Diazinon	333-41-5	2	µg/L	----	----	----	<2	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	----	----	<2	----
Malathion	121-75-5	2	µg/L	----	----	----	<2	----
Fenthion	55-38-9	2	µg/L	----	----	----	<2	----
Chlorpyrifos	2921-88-2	2	µg/L	----	----	----	<2	----
Pirimphos-ethyl	23505-41-1	2	µg/L	----	----	----	<2	----
Chlorfenvinphos	470-90-6	2	µg/L	----	----	----	<2	----
Prothiofos	34643-46-4	2	µg/L	----	----	----	<2	----
Ethion	563-12-2	2	µg/L	----	----	----	<2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	----	----	----	<50	----
C15 - C28 Fraction	----	100	µg/L	----	----	----	<100	----
C29 - C36 Fraction	----	50	µg/L	----	----	----	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	----	----	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	----	----	----	<100	----
>C16 - C34 Fraction	----	100	µg/L	----	----	----	<100	----
>C34 - C40 Fraction	----	100	µg/L	----	----	----	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	----	----	----	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	----	----	----	<100	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	----	----	----	<0.01	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	<0.01	----
EP068S: Organochlorine Pesticide Surrogate								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	SBT_GW_4003	SBT_GW_4005	SBT_GW_4014
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-001	ES2245132-002	ES2245132-003	ES2245132-004	ES2245132-005
				Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued								
Dibromo-DDE	21655-73-2	0.5	%	----	----	----	53.8	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	----	----	----	56.9	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	110	113	121	116	114
Toluene-D8	2037-26-5	5	%	117	117	122	120	117
4-Bromofluorobenzene	460-00-4	5	%	116	116	122	117	114
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	----	----	----	Not Determined	----
2-Chlorophenol-D4	93951-73-6	1.0	%	----	----	----	Not Determined	----
2.4.6-Tribromophenol	118-79-6	1.0	%	----	----	----	Not Determined	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	----	----	----	51.6	----
Anthracene-d10	1719-06-8	1.0	%	----	----	----	64.3	----
4-Terphenyl-d14	1718-51-0	1.0	%	----	----	----	67.8	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	----	----	----	12.2	----
Phenol-d6	13127-88-3	2	%	----	----	----	2.5	----
2-Chlorophenol-D4	93951-73-6	2	%	----	----	----	1.7	----
2.4.6-Tribromophenol	118-79-6	2	%	----	----	----	1.1	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	----	----	----	49.2	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	----	----	----	44.2	----
2-Fluorobiphenyl	321-60-8	2	%	----	----	----	45.6	----
Anthracene-d10	1719-06-8	2	%	----	----	----	61.0	----
4-Terphenyl-d14	1718-51-0	2	%	----	----	----	62.1	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	115	119	127	121	134
Toluene-D8	2037-26-5	2	%	113	113	118	116	125
4-Bromofluorobenzene	460-00-4	2	%	115	115	121	116	126
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	----	----	----	96.2	----
13C8-PFOA	----	0.02	%	----	----	----	83.7	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_4017	SBT-GW-4019	SBT-GW-4021	SBT-GW-A315	SBT-GW-1037
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-006	ES2245132-007	ES2245132-008	ES2245132-009	ES2245132-010
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	8.04	8.12	8.02	6.52	6.97
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	16200	14500	21400	24800	11500
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	10200	8860	14900	17100	7120
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1070	779	955	36	42
Total Alkalinity as CaCO3	----	1	mg/L	1070	779	955	36	42
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	471	264	569	619	545
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	5420	5090	7700	8720	3970
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	191	218	289	17	20
Magnesium	7439-95-4	1	mg/L	475	238	626	755	207
Sodium	7440-23-5	1	mg/L	2750	2680	3640	3950	2070
Potassium	7440-09-7	1	mg/L	30	33	16	2	2
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	0.07	0.03
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.006	<0.001	0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	0.0001	0.0002
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	0.002
Cobalt	7440-48-4	0.001	mg/L	0.006	0.003	0.003	0.307	0.143
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	0.205	0.119	1.23	0.735	4.97
Nickel	7440-02-0	0.001	mg/L	0.008	0.005	0.003	0.091	0.026
Zinc	7440-66-6	0.005	mg/L	0.009	<0.005	0.010	0.043	0.041
Iron	7439-89-6	0.05	mg/L	<0.05	0.61	<0.05	23.2	0.22
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.06	0.38	32.5	12.4	23.9
Cobalt	7440-48-4	0.001	mg/L	0.006	0.003	0.075	0.396	0.173

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_4017	SBT-GW-4019	SBT-GW-4021	SBT-GW-A315	SBT-GW-1037
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-006	ES2245132-007	ES2245132-008	ES2245132-009	ES2245132-010
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.225	0.114	11.4	1.19	4.95
Iron	7439-89-6	0.05	mg/L	3.90	2.14	233	59.6	77.9
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.75	3.35	0.12	0.18	0.34
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.11	<0.01	0.05	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.02	<0.01	<0.01	0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.13	<0.01	0.02	0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.9	3.2	28.3	4.5	4.9
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	1.0	3.2	28.3	4.5	4.9
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.07	0.06	16.2	1.24	2.23
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	184	165	248	260	124
ø Total Cations	----	0.01	meq/L	169	148	225	235	108
ø Ionic Balance	----	0.01	%	4.27	5.36	4.96	5.00	6.91
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	14	17	4	3	13
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
EP080: BTEXN								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_4017	SBT-GW-4019	SBT-GW-4021	SBT-GW-A315	SBT-GW-1037
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-006	ES2245132-007	ES2245132-008	ES2245132-009	ES2245132-010
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	121	117	113	122	120
Toluene-D8	2037-26-5	5	%	121	119	113	122	120
4-Bromofluorobenzene	460-00-4	5	%	119	117	114	121	119
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	126	137	118	126	126
Toluene-D8	2037-26-5	2	%	117	127	110	123	116
4-Bromofluorobenzene	460-00-4	2	%	116	125	111	124	116

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	5.24	5.55	6.53	7.94	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	11900	8400	37000	11900	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	8550	5120	25800	7640	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	4	20	384	----
Total Alkalinity as CaCO3	----	1	mg/L	2	4	20	384	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	194	187	792	760	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	3990	2980	13700	3960	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	3	10	113	149	----
Magnesium	7439-95-4	1	mg/L	205	198	1410	317	----
Sodium	7440-23-5	1	mg/L	2220	2040	6110	2030	----
Potassium	7440-09-7	1	mg/L	4	4	16	14	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.90	1.02	0.51	<0.01	----
Arsenic	7440-38-2	0.001	mg/L	0.002	<0.001	<0.010	0.003	<0.001
Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0007	0.0023	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.010	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.128	0.101	0.669	0.008	----
Copper	7440-50-8	0.001	mg/L	0.012	0.002	<0.010	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	0.006	<0.001	<0.010	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	0.074	0.192	9.35	0.648	----
Nickel	7440-02-0	0.001	mg/L	0.065	0.067	0.392	0.005	<0.001
Zinc	7440-66-6	0.005	mg/L	0.182	0.187	0.833	0.008	<0.005
Iron	7439-89-6	0.05	mg/L	0.60	23.7	<0.10	1.67	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	3.38	2.19	3.83	3.67	----
Cobalt	7440-48-4	0.001	mg/L	0.138	0.102	0.695	0.019	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.111	0.171	9.78	0.721	----
Iron	7439-89-6	0.05	mg/L	4.25	25.8	5.94	12.9	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	----	----	<0.01	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	----	----	<0.01	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.15	0.66	0.64	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.03	<0.01	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	183	0.07	0.03	0.01	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	183	0.07	0.06	0.01	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.4	0.7	1.3	8.2	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	183	0.8	1.4	8.2	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.07	0.04	0.16	2.41	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	117	88.0	403	135	----
ø Total Cations	----	0.01	meq/L	114	106	388	122	----
ø Ionic Balance	----	0.01	%	1.28	9.08	1.96	5.06	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	12	13	2	2	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	----	<0.5	<0.5	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	<0.5	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	----	----	<0.5	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L	----	----	<0.5	<0.5	----
delta-BHC	319-86-8	0.5	µg/L	----	----	<0.5	<0.5	----
Heptachlor	76-44-8	0.5	µg/L	----	----	<0.5	<0.5	----
Aldrin	309-00-2	0.5	µg/L	----	----	<0.5	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----	<0.5	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L	----	----	<0.5	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----	<0.5	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L	----	----	<0.5	<0.5	----
Dieldrin	60-57-1	0.5	µg/L	----	----	<0.5	<0.5	----
4.4`-DDE	72-55-9	0.5	µg/L	----	----	<0.5	<0.5	----
Endrin	72-20-8	0.5	µg/L	----	----	<0.5	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----	<0.5	<0.5	----
4.4`-DDD	72-54-8	0.5	µg/L	----	----	<0.5	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----	<0.5	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----	<0.5	<0.5	----
4.4`-DDT	50-29-3	2.0	µg/L	----	----	<2.0	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L	----	----	<0.5	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L	----	----	<2.0	<2.0	----
^ Total Chlordane (sum)	----	0.5	µg/L	----	----	<0.5	<0.5	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	----	<0.5	<0.5	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	----	<0.5	<0.5	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	----	<0.5	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----	<0.5	<0.5	----
Monocrotophos	6923-22-4	2.0	µg/L	----	----	<2.0	<2.0	----
Dimethoate	60-51-5	0.5	µg/L	----	----	<0.5	<0.5	----
Diazinon	333-41-5	0.5	µg/L	----	----	<0.5	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----	<0.5	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L	----	----	<2.0	<2.0	----
Malathion	121-75-5	0.5	µg/L	----	----	<0.5	<0.5	----
Fenthion	55-38-9	0.5	µg/L	----	----	<0.5	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----	<0.5	<0.5	----
Parathion	56-38-2	2.0	µg/L	----	----	<2.0	<2.0	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	<0.5	<0.5	----
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	<0.5	<0.5	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	<0.5	<0.5	----
Fenamiphos	22224-92-6	0.5	µg/L	----	----	<0.5	<0.5	----
Prothiofos	34643-46-4	0.5	µg/L	----	----	<0.5	<0.5	----
Ethion	563-12-2	0.5	µg/L	----	----	<0.5	<0.5	----
Carbophenothion	786-19-6	0.5	µg/L	----	----	<0.5	<0.5	----
Azinphos Methyl	86-50-0	0.5	µg/L	----	----	<0.5	<0.5	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	----	----	<1	<1	----
Toluene	108-88-3	2	µg/L	----	----	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	----	----	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	----	<2	<2	----
Styrene	100-42-5	5	µg/L	----	----	<5	<5	----
ortho-Xylene	95-47-6	2	µg/L	----	----	<2	<2	----
Isopropylbenzene	98-82-8	5	µg/L	----	----	<5	<5	----
n-Propylbenzene	103-65-1	5	µg/L	----	----	<5	<5	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	----	----	<5	<5	----
sec-Butylbenzene	135-98-8	5	µg/L	----	----	<5	<5	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	----	----	<5	<5	----
tert-Butylbenzene	98-06-6	5	µg/L	----	----	<5	<5	----
p-Isopropyltoluene	99-87-6	5	µg/L	----	----	<5	<5	----
n-Butylbenzene	104-51-8	5	µg/L	----	----	<5	<5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	----	----	<50	<50	----
2-Butanone (MEK)	78-93-3	50	µg/L	----	----	<50	**90**	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	----	----	<50	<50	----
2-Hexanone (MBK)	591-78-6	50	µg/L	----	----	<50	<50	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	----	<5	<5	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	----	<5	<5	----
1.2-Dichloropropane	78-87-5	5	µg/L	----	----	<5	<5	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	----	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP074D: Fumigants - Continued								
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	----	<5	<5	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	----	<5	<5	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	----	<50	<50	----
Chloromethane	74-87-3	50	µg/L	----	----	<50	<50	----
Vinyl chloride	75-01-4	50	µg/L	----	----	<50	<50	----
Bromomethane	74-83-9	50	µg/L	----	----	<50	<50	----
Chloroethane	75-00-3	50	µg/L	----	----	<50	<50	----
Trichlorofluoromethane	75-69-4	50	µg/L	----	----	<50	<50	----
1.1-Dichloroethene	75-35-4	5	µg/L	----	----	<5	<5	----
Iodomethane	74-88-4	5	µg/L	----	----	<5	<5	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	----	<5	<5	----
1.1-Dichloroethane	75-34-3	5	µg/L	----	----	<5	<5	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	----	<5	<5	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	----	<5	<5	----
1.1-Dichloropropylene	563-58-6	5	µg/L	----	----	<5	<5	----
Carbon Tetrachloride	56-23-5	5	µg/L	----	----	<5	<5	----
1.2-Dichloroethane	107-06-2	5	µg/L	----	----	<5	<5	----
Trichloroethene	79-01-6	5	µg/L	----	----	<5	<5	----
Dibromomethane	74-95-3	5	µg/L	----	----	<5	<5	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	----	<5	<5	----
1.3-Dichloropropane	142-28-9	5	µg/L	----	----	<5	<5	----
Tetrachloroethene	127-18-4	5	µg/L	----	----	<5	<5	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	----	<5	<5	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	----	<5	<5	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	----	<5	<5	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	----	<5	<5	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	----	<5	<5	----
Pentachloroethane	76-01-7	5	µg/L	----	----	<5	<5	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	----	----	<5	<5	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	----	----	<5	<5	----
Bromobenzene	108-86-1	5	µg/L	----	----	<5	<5	----
2-Chlorotoluene	95-49-8	5	µg/L	----	----	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
4-Chlorotoluene	106-43-4	5	µg/L	----	----	<5	<5	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	----	----	<5	<5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	----	----	<5	<5	----
Bromodichloromethane	75-27-4	5	µg/L	----	----	<5	<5	----
Dibromochloromethane	124-48-1	5	µg/L	----	----	<5	<5	----
Bromoform	75-25-2	5	µg/L	----	----	<5	<5	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	----	<1.0	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L	----	----	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L	----	----	<1.0	<1.0	----
Fluorene	86-73-7	1.0	µg/L	----	----	<1.0	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L	----	----	<1.0	<1.0	----
Anthracene	120-12-7	1.0	µg/L	----	----	<1.0	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L	----	----	<1.0	<1.0	----
Pyrene	129-00-0	1.0	µg/L	----	----	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L	----	----	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L	----	----	<1.0	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	----	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	----	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	----	<1.0	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	----	<1.0	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	----	<1.0	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	<0.5	<0.5	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	----	<2	<2	----
2-Chlorophenol	95-57-8	2	µg/L	----	----	<2	<2	----
2-Methylphenol	95-48-7	2	µg/L	----	----	<2	<2	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	----	<4	<4	----
2-Nitrophenol	88-75-5	2	µg/L	----	----	<2	<2	----
2.4-Dimethylphenol	105-67-9	2	µg/L	----	----	<2	<2	----
2.4-Dichlorophenol	120-83-2	2	µg/L	----	----	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
2.6-Dichlorophenol	87-65-0	2	µg/L	----	----	<2	<2	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	----	<2	<2	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	----	<2	<2	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	----	<2	<2	----
Pentachlorophenol	87-86-5	4	µg/L	----	----	<4	<4	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	----	<2	<2	----
2-Methylnaphthalene	91-57-6	2	µg/L	----	----	<2	<2	----
2-Chloronaphthalene	91-58-7	2	µg/L	----	----	<2	<2	----
Acenaphthylene	208-96-8	2	µg/L	----	----	<2	<2	----
Acenaphthene	83-32-9	2	µg/L	----	----	<2	<2	----
Fluorene	86-73-7	2	µg/L	----	----	<2	<2	----
Phenanthrene	85-01-8	2	µg/L	----	----	<2	<2	----
Anthracene	120-12-7	2	µg/L	----	----	<2	<2	----
Fluoranthene	206-44-0	2	µg/L	----	----	<2	<2	----
Pyrene	129-00-0	2	µg/L	----	----	<2	<2	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	----	<2	<2	----
Benz(a)anthracene	56-55-3	2	µg/L	----	----	<2	<2	----
Chrysene	218-01-9	2	µg/L	----	----	<2	<2	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	----	<4	<4	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	----	<2	<2	----
Benzo(a)pyrene	50-32-8	2	µg/L	----	----	<2	<2	----
3-Methylcholanthrene	56-49-5	2	µg/L	----	----	<2	<2	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	----	<2	<2	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	----	<2	<2	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	----	<2	<2	----
^ Sum of PAHs	----	2	µg/L	----	----	<2	<2	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	----	<2	<2	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	----	<2	<2	----
Diethyl phthalate	84-66-2	2	µg/L	----	----	<2	<2	----
Di-n-butyl phthalate	84-74-2	2	µg/L	----	----	<2	<2	----
Butyl benzyl phthalate	85-68-7	2	µg/L	----	----	<2	<2	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	----	<10	<10	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued								
Di-n-octylphthalate	117-84-0	2	µg/L	----	----	<2	<2	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	----	<2	<2	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	----	<2	<2	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	----	<4	<4	----
N-Nitrosomorpholine	59-89-2	2	µg/L	----	----	<2	<2	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	----	<2	<2	----
N-Nitrosopiperidine	100-75-4	2	µg/L	----	----	<2	<2	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	----	<2	<2	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	----	<4	<4	----
Methapyrilene	91-80-5	2	µg/L	----	----	<2	<2	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	----	----	<2	<2	----
Acetophenone	98-86-2	2	µg/L	----	----	<2	<2	----
Nitrobenzene	98-95-3	2	µg/L	----	----	<2	<2	----
Isophorone	78-59-1	2	µg/L	----	----	<2	<2	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	----	<4	<4	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	----	<4	<4	----
1-Naphthylamine	134-32-7	2	µg/L	----	----	<2	<2	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	----	<2	<2	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	----	<2	<2	----
Azobenzene	103-33-3	2	µg/L	----	----	<2	<2	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	----	<2	<2	----
Phenacetin	62-44-2	2	µg/L	----	----	<2	<2	----
4-Aminobiphenyl	92-67-1	2	µg/L	----	----	<2	<2	----
Pentachloronitrobenzene	82-68-8	2	µg/L	----	----	<2	<2	----
Pronamide	23950-58-5	2	µg/L	----	----	<2	<2	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	----	<2	<2	----
Chlorobenzilate	510-15-6	2	µg/L	----	----	<2	<2	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	----	<2	<2	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	----	<2	<2	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	----	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP075F: Haloethers - Continued								
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	----	<2	<2	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	----	<2	<2	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	----	<2	<2	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	----	<2	<2	----
Hexachloroethane	67-72-1	2	µg/L	----	----	<2	<2	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	----	<2	<2	----
Hexachloropropylene	1888-71-7	2	µg/L	----	----	<2	<2	----
Hexachlorobutadiene	87-68-3	2	µg/L	----	----	<2	<2	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	----	<10	<10	----
Pentachlorobenzene	608-93-5	2	µg/L	----	----	<2	<2	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	----	<4	<4	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	----	----	<2	<2	----
4-Chloroaniline	106-47-8	2	µg/L	----	----	<2	<2	----
2-Nitroaniline	88-74-4	4	µg/L	----	----	<4	<4	----
3-Nitroaniline	99-09-2	4	µg/L	----	----	<4	<4	----
Dibenzofuran	132-64-9	2	µg/L	----	----	<2	<2	----
4-Nitroaniline	100-01-6	2	µg/L	----	----	<2	<2	----
Carbazole	86-74-8	2	µg/L	----	----	<2	<2	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	----	<2	<2	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	----	----	<2	<2	----
beta-BHC	319-85-7	2	µg/L	----	----	<2	<2	----
gamma-BHC	58-89-9	2	µg/L	----	----	<2	<2	----
delta-BHC	319-86-8	2	µg/L	----	----	<2	<2	----
Heptachlor	76-44-8	2	µg/L	----	----	<2	<2	----
Aldrin	309-00-2	2	µg/L	----	----	<2	<2	----
Heptachlor epoxide	1024-57-3	2	µg/L	----	----	<2	<2	----
alpha-Endosulfan	959-98-8	2	µg/L	----	----	<2	<2	----
4.4`-DDE	72-55-9	2	µg/L	----	----	<2	<2	----
Dieldrin	60-57-1	2	µg/L	----	----	<2	<2	----
Endrin	72-20-8	2	µg/L	----	----	<2	<2	----
beta-Endosulfan	33213-65-9	2	µg/L	----	----	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
4.4`-DDD	72-54-8	2	µg/L	----	----	<2	<2	----
Endosulfan sulfate	1031-07-8	2	µg/L	----	----	<2	<2	----
4.4`-DDT	50-29-3	4	µg/L	----	----	<4	<4	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	----	<4	<4	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	----	<4	<4	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	----	<2	<2	----
Dimethoate	60-51-5	2	µg/L	----	----	<2	<2	----
Diazinon	333-41-5	2	µg/L	----	----	<2	<2	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	----	<2	<2	----
Malathion	121-75-5	2	µg/L	----	----	<2	<2	----
Fenthion	55-38-9	2	µg/L	----	----	<2	<2	----
Chlorpyrifos	2921-88-2	2	µg/L	----	----	<2	<2	----
Pirimphos-ethyl	23505-41-1	2	µg/L	----	----	<2	<2	----
Chlorfenvinphos	470-90-6	2	µg/L	----	----	<2	<2	----
Prothiofos	34643-46-4	2	µg/L	----	----	<2	<2	----
Ethion	563-12-2	2	µg/L	----	----	<2	<2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	----	----	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	----	----	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	----	----	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	----	----	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	----	----	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	----	----	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	----	----	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	----	----	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	----	----	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	----	----	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	<0.01	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1042	SBT-GW-1043	SBT-GW-1048	SBT-GW-1063	RINSE-131222-JP
			Sampling date / time	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00	13-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245132-011	ES2245132-012	ES2245132-013	ES2245132-014	ES2245132-015
				Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued								
Dibromo-DDE	21655-73-2	0.5	%	----	----	61.5	56.4	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	----	----	66.0	57.8	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	83.2	116	98.0	121	----
Toluene-D8	2037-26-5	5	%	82.4	113	92.0	120	----
4-Bromofluorobenzene	460-00-4	5	%	81.0	114	95.4	120	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	----	----	26.6	26.1	----
2-Chlorophenol-D4	93951-73-6	1.0	%	----	----	49.9	48.5	----
2.4.6-Tribromophenol	118-79-6	1.0	%	----	----	53.1	39.8	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	----	----	62.7	50.6	----
Anthracene-d10	1719-06-8	1.0	%	----	----	72.9	62.0	----
4-Terphenyl-d14	1718-51-0	1.0	%	----	----	75.6	64.6	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	----	----	33.0	31.4	----
Phenol-d6	13127-88-3	2	%	----	----	26.2	24.6	----
2-Chlorophenol-D4	93951-73-6	2	%	----	----	47.9	47.5	----
2.4.6-Tribromophenol	118-79-6	2	%	----	----	45.9	40.8	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	----	----	54.5	53.8	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	----	----	49.1	45.9	----
2-Fluorobiphenyl	321-60-8	2	%	----	----	50.0	44.6	----
Anthracene-d10	1719-06-8	2	%	----	----	62.6	59.2	----
4-Terphenyl-d14	1718-51-0	2	%	----	----	62.7	60.5	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	87.3	122	102	127	117
Toluene-D8	2037-26-5	2	%	79.8	109	88.9	117	105
4-Bromofluorobenzene	460-00-4	2	%	79.9	110	93.2	120	108
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	----	----	102	95.5	98.0
13C8-PFOA	----	0.02	%	----	----	89.8	89.9	93.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC9-131222_TX	----	----	----	----
			Sampling date / time	13-Dec-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2245132-016	--------	--------	--------	--------
				Result	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	5.99	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	9550	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	6150	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	8	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	8	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	187	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	3460	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	8	----	----	----	----
Magnesium	7439-95-4	1	mg/L	181	----	----	----	----
Sodium	7440-23-5	1	mg/L	1840	----	----	----	----
Potassium	7440-09-7	1	mg/L	4	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	2.88	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	0.0006	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	0.092	----	----	----	----
Copper	7440-50-8	0.001	mg/L	0.003	----	----	----	----
Lead	7439-92-1	0.001	mg/L	0.002	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	0.166	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.060	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.177	----	----	----	----
Iron	7439-89-6	0.05	mg/L	20.9	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.91	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	0.110	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC9-131222_TX	----	----	----	----
			Sampling date / time	13-Dec-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2245132-016	--------	--------	--------	--------
				Result	----	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	**0.170**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**13.0**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.16**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.07**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.07**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.9**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.0**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.04**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**102**	----	----	----	----
ø Total Cations	----	0.01	meq/L	**95.4**	----	----	----	----
ø Ionic Balance	----	0.01	%	**3.16**	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**12**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080: BTEXN								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC9-131222_TX	----	----	----	----
			Sampling date / time	13-Dec-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2245132-016	--------	--------	--------	--------
				Result	----	----	----	----
EP080: BTEXN - Continued								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ Total Xylenes	----	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**115**	----	----	----	----
Toluene-D8	2037-26-5	5	%	**113**	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	**115**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**120**	----	----	----	----
Toluene-D8	2037-26-5	2	%	**110**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	**112**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2245132**	Page	: 1 of 23
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 13-Dec-2022
Order number	: ----	Date Analysis Commenced	: 13-Dec-2022
C-O-C number	: 9224	Issue Date	: 23-Dec-2022
Sampler	: JP + KT + TX		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 18		
No. of samples analysed	: 16		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 50%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4766465)									
ES2245132-001	MW01	EA005-P: pH Value	----	0.01	pH Unit	7.95	7.95	0.0	0% - 20%
ES2245132-009	SBT-GW-A315	EA005-P: pH Value	----	0.01	pH Unit	6.52	6.45	1.1	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4766464)									
ES2245132-001	MW01	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	21600	21700	0.5	0% - 20%
ES2245132-009	SBT-GW-A315	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	24800	24800	0.4	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4775377)									
ES2245132-001	MW01	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	15100	15000	0.6	0% - 20%
ES2245132-011	SBT-GW-1042	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	8550	8720	2.0	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4766466)									
ES2245132-001	MW01	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	953	819	15.1	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	953	819	15.1	0% - 20%
ES2245132-009	SBT-GW-A315	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	36	30	17.2	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	36	30	17.2	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4768430)									
ES2245061-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
ES2245132-010	SBT-GW-1037	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	545	540	1.1	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4768431)									
ES2245061-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	<1	<1	0.0	No Limit
ES2245132-010	SBT-GW-1037	ED045G: Chloride	16887-00-6	1	mg/L	3970	3920	1.3	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED093F: Dissolved Major Cations (QC Lot: 4776029)									
ES2244962-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	4	5	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	3	3	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	7	7	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	6	6	0.0	No Limit
ES2244961-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	114	112	1.5	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	144	140	2.9	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	2040	1970	3.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 4776034)									
ES2245132-009	SBT-GW-A315	ED093F: Calcium	7440-70-2	1	mg/L	17	17	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	755	779	3.1	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	3950	4120	4.2	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	2	3	0.0	No Limit
ES2245167-006	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	23	23	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	10	10	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	50	49	3.7	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	6	6	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4776030)									
ES2244962-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.010	0.010	0.0	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.151	0.161	6.5	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.004	0.005	36.8	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.026	0.028	6.5	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.31	0.33	5.2	0% - 20%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.64	0.68	5.7	0% - 50%
ES2244961-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.042	0.046	9.6	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.010	0.009	13.6	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.004	0.005	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.017	0.017	0.0	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.050	0.048	6.0	0% - 50%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4776033)									
ES2245132-009	SBT-GW-A315	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.307	0.314	2.2	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.735	0.767	4.3	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.091	0.099	8.3	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.043	0.046	6.1	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.07	0.07	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	23.2	23.9	3.0	0% - 20%
ES2245167-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.343	0.333	3.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.11	0.11	0.0	0% - 50%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.21	0.19	10.9	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4771452)									
ES2245132-001	MW01	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.576	0.571	0.8	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.55	0.53	4.4	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.40	1.32	5.9	0% - 20%
ES2245132-011	SBT-GW-1042	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.138	0.138	0.0	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.111	0.095	14.8	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	3.38	3.58	5.8	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	4.25	4.62	8.3	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4776031)									
ES2244961-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2245132-004	SBT_GW_4005	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4776035)									
ES2245132-016	QC9-131222_TX	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4777868)									
ES2245001-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2245182-003	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4776739)									
ES2245132-001	MW01	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.25	0.25	0.0	0% - 20%
ES2245132-010	SBT-GW-1037	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.34	0.33	0.0	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4768429)									
ES2245059-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2245061-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4768433)									
ES2245270-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2245132-010	SBT-GW-1037	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4776740)									
ES2245132-001	MW01	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.06	0.07	0.0	No Limit
ES2245132-010	SBT-GW-1037	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4776736)									
ES2245132-001	MW01	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.7	<0.5	30.2	No Limit
ES2245132-011	SBT-GW-1042	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.4	0.9	78.8	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4776735)									
ES2245132-001	MW01	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.10	0.11	0.0	No Limit
ES2245132-011	SBT-GW-1042	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.07	0.07	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4768428)									
ES2245059-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2245132-010	SBT-GW-1037	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4768434)									
ES2245132-013	SBT-GW-1048	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ME2202193-004	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4772912)									
ES2244848-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	124	116	6.5	0% - 20%
ES2245086-006	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	2	1	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4772913)									
ES2245132-005	SBT_GW_4014	EP005: Total Organic Carbon	----	1	mg/L	7	9	32.1	No Limit
ES2245132-015	RINSE-131222-JP	EP005: Total Organic Carbon	----	1	mg/L	<1	<1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4779709)									
ES2245132-001	MW01	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4779709) - continued									
ES2245132-001	MW01	EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2245132-011	SBT-GW-1042	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4779709)									
ES2245132-001	MW01	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2245132-011	SBT-GW-1042	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4779709)									
ES2245132-001	MW01	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2245132-011	SBT-GW-1042	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4779709)									
ES2245132-001	MW01	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074D: Fumigants (QC Lot: 4779709) - continued									
ES2245132-011	SBT-GW-1042	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4779709)									
ES2245132-001	MW01	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2245132-011	SBT-GW-1042	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4779709) - continued									
ES2245132-011	SBT-GW-1042	EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4779709)									
ES2245132-001	MW01	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2245132-011	SBT-GW-1042	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4779709)									
ES2245132-001	MW01	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2245132-011	SBT-GW-1042	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4779710)									
ES2245132-001	MW01	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2245132-011	SBT-GW-1042	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4779710)									
ES2245132-001	MW01	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2245132-011	SBT-GW-1042	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4779710)									
ES2245132-001	MW01	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2245132-011	SBT-GW-1042	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4777333)									
ES2245180-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.07	0.06	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2245180-002	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4777333)									
ES2245180-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2245180-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4777333)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4777333) - continued									
ES2245180-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2245180-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4766465)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4766464)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	92.5	89.9	110
				<1	2100 µS/cm	96.4	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4775377)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	97.2	87.0	109
				<10	293 mg/L	106	75.2	126
				<10	2340 mg/L	106	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4766466)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	90.0	81.0	111
				----	50 mg/L	105	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4768430)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	98.0	82.0	122
				<1	500 mg/L	102	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4768431)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	108	80.9	127
				<1	1000 mg/L	102	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4776029)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	103	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	96.5	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	97.4	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	98.6	85.0	113
ED093F: Dissolved Major Cations (QCLot: 4776034)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	106	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	98.5	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	99.4	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4776030)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.1	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.7	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	91.8	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.4	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	98.3	82.0	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4776030) - continued								
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.1	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.7	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	97.4	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.6	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.4	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	97.2	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4776033)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.4	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.4	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.7	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	101	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	103	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.0	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.9	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.2	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.3	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4771452)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	91.9	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	98.8	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.6	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.1	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4776031)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.9	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4776035)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.5	83.0	105
EG050F: Dissolved Hexavalent Chromium (QCLot: 4777868)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	106	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4776739)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	98.6	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4768429)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	98.9	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4768433)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.4	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4776740)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	103	91.0	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4776736)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	78.9	69.0	101
				<0.1	1 mg/L	82.7	70.0	118
				<0.1	5 mg/L	85.9	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4776735)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	98.2	71.3	126
				<0.01	0.442 mg/L	96.8	71.3	126
				<0.01	1 mg/L	112	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4768428)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	103	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4768434)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	101	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4772912)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	104	72.0	120
EP005: Total Organic Carbon (TOC) (QCLot: 4772913)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	103	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4774975)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	90.9	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	86.5	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	96.5	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	96.0	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	103	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	96.5	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	94.3	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	95.7	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	97.6	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	102	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	100	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	97.6	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	99.2	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	104	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	101	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	102	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	87.5	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	102	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	102	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	108	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	86.6	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4774975)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4774975) - continued								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	92.6	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	96.2	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.7	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	94.4	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	101	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	99.7	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	101	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	99.4	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	97.5	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	95.7	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	96.2	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	96.9	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	89.0	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	97.7	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	96.4	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	98.5	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	97.8	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	104	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	106	51.6	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4779709)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	99.2	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	96.2	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.2	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	99.3	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	92.7	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	96.3	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	97.2	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	100	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	97.2	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	100	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	96.7	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	97.6	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	99.2	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	100	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4779709)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	99.5	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	109	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	96.1	66.0	132

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074B: Oxygenated Compounds (QCLot: 4779709) - continued								
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	106	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4779709)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	107	72.8	127
EP074D: Fumigants (QCLot: 4779709)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	104	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	93.2	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	92.0	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	93.6	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	90.9	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4779709)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	127	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	# 131	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	118	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	101	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	107	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	112	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	102	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	122	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	102	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	97.8	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	97.5	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	101	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	102	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	103	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	93.1	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	96.5	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	93.5	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	94.6	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	94.0	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	96.1	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	90.8	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	85.9	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	93.4	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	97.3	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	89.5	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	94.9	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	93.6	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4779709)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074F: Halogenated Aromatic Compounds (QCLot: 4779709) - continued								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	97.1	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	93.6	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	98.9	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	98.0	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	84.5	67.0	123
EP074G: Trihalomethanes (QCLot: 4779709)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	97.1	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	89.7	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	89.4	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	91.8	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4774974)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	77.5	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	81.0	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	85.9	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	79.9	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	72.0	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	75.7	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	71.5	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	73.5	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	77.6	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	70.6	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	68.7	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	81.8	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	74.9	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	67.4	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	67.5	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	67.2	59.1	118
EP075A: Phenolic Compounds (QCLot: 4774976)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	42.3	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	74.2	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	72.2	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	65.6	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	83.9	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	61.7	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	79.5	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	# 57.9	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	62.9	61.4	107

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075A: Phenolic Compounds (QCLot: 4774976) - continued								
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	59.8	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	68.6	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	63.7	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4774976)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	57.0	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	59.4	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	66.9	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	# 63.5	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	71.6	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	73.1	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	78.6	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	79.6	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	82.0	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	83.8	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	88.2	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	86.6	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	83.1	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	85.4	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	79.9	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	83.3	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	90.6	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	84.3	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	86.0	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	84.6	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4774976)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	69.4	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	75.1	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	89.6	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	87.7	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	119	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	91.9	62.1	115
EP075D: Nitrosamines (QCLot: 4774976)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	76.4	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	77.0	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	67.5	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	69.2	42.0	100

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075D: Nitrosamines (QCLot: 4774976) - continued								
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	90.8	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	82.4	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	77.1	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	74.8	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	33.3	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4774976)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	54.4	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	84.7	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	81.2	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	90.5	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	70.6	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	74.1	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	67.8	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	69.7	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	83.1	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	76.9	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	74.0	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	82.5	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	80.0	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	82.7	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	77.3	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	72.8	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	80.4	57.7	110
EP075F: Haloethers (QCLot: 4774976)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	84.1	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	85.8	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	74.4	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	76.6	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4774976)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	81.0	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	83.0	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	82.7	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	84.0	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	81.6	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	56.0	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	58.8	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	50.3	23.5	107

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075G: Chlorinated Hydrocarbons (QCLot: 4774976) - continued								
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	69.6	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	76.4	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4774976)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	68.4	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	59.9	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	64.8	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	77.3	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	66.8	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	73.4	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	78.1	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	73.9	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4774976)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	76.2	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	82.3	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	73.2	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	75.0	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	83.3	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	91.0	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	76.8	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	86.3	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	87.8	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	80.8	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	79.0	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	83.5	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	86.2	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	83.4	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	85.1	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4774976)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	70.4	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	77.3	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	80.4	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	81.6	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	87.9	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	83.1	57.0	115

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075J: Organophosphorus Pesticides (QCLot: 4774976) - continued								
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	87.1	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	88.1	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	79.1	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	90.8	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	88.1	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4774973)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	72.8	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	83.4	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	88.0	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4776148)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	73.2	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	81.8	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	73.8	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4779710)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	110	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4774973)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	75.4	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	87.7	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	82.1	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4776148)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	62.2	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	82.2	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	67.1	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4779710)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	115	75.0	127
EP080: BTEXN (QCLot: 4779710)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	102	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	106	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	110	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	109	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	105	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	100	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4777333)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	79.4	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	85.2	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	84.6	65.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4777333)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	97.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	90.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.8	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4777333)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	84.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	85.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	98.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	117	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4768430)							
ES2245061-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	99.4	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4768431)							
ES2245061-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	104	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4776030)							
ES2244848-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	82.2	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	76.1	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	72.2	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	76.7	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	107	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	77.6	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	77.9	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	70.3	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	73.6	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4776033)							
ES2245132-010	SBT-GW-1037	EG020A-F: Arsenic	7440-38-2	1 mg/L	104	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	90.8	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	92.4	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	102	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	104	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4776033) - continued							
ES2245132-010	SBT-GW-1037	EG020A-F: Lead	7439-92-1	1 mg/L	88.2	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	# Not Determined	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	98.2	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	96.6	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4771452)							
ES2245132-002	MW02	EG020A-T: Cobalt	7440-48-4	1 mg/L	106	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.6	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4776031)							
ES2244961-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	92.5	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4776035)							
ES2245132-015	RINSE-131222-JP	EG035F: Mercury	7439-97-6	0.01 mg/L	98.8	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4777868)							
ES2245001-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	92.2	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4776739)							
ES2245132-001	MW01	EK055G: Ammonia as N	7664-41-7	1 mg/L	129	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4768429)							
ES2245059-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	104	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4768433)							
ES2245132-013	SBT-GW-1048	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	98.9	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4776740)							
ES2245132-001	MW01	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	107	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4776736)							
ES2245132-002	MW02	EK061G: Total Kjeldahl Nitrogen as N	----	25 mg/L	82.7	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4776735)							
ES2245132-002	MW02	EK067G: Total Phosphorus as P	----	5 mg/L	100	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4768428)							
ES2245059-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	105	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4768434)							
ES2245132-013	SBT-GW-1048	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	98.0	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4772912)							
ES2244848-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	101	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4772913)							
ES2245132-006	SBT_GW_4017	EP005: Total Organic Carbon	----	100 mg/L	96.8	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4779709)							
ES2245132-001	MW01	EP074: Benzene	71-43-2	25 µg/L	116	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	119	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4779709)							
ES2245132-001	MW01	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	97.7	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	112	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4779709)							
ES2245132-001	MW01	EP074: Chlorobenzene	108-90-7	25 µg/L	125	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4779710)							
ES2245132-001	MW01	EP080: C6 - C9 Fraction	----	325 µg/L	71.1	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4779710)							
ES2245132-001	MW01	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	# 68.7	70.0	130
EP080: BTEXN (QCLot: 4779710)							
ES2245132-001	MW01	EP080: Benzene	71-43-2	25 µg/L	76.8	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	76.1	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	77.0	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	76.1	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	79.4	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	75.4	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4777333)							
ES2245180-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	94.4	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	74.2	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	81.6	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4777333)							
ES2245180-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	85.2	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	126	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	111	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	102	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	88.6	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4777333)							
ES2245180-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	86.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	79.0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	101	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	116	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2245132**	Page	: 1 of 17
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 13-Dec-2022
Site	: ----	Issue Date	: 23-Dec-2022
Sampler	: JP + KT + TX	No. of samples received	: 18
Order number	: ----	No. of samples analysed	: 16

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP074E: Halogenated Aliphatic Compounds	QC-4779709-002	----	**Chloromethane**	74-87-3	131 %	67.4-130%	**Recovery greater than upper control limit**
EP075A: Phenolic Compounds	QC-4774976-002	----	**2.6-Dichlorophenol**	87-65-0	57.9 %	61.5-108%	**Recovery less than lower control limit**
EP075B: Polynuclear Aromatic Hydrocarbons	QC-4774976-002	----	**Acenaphthylene**	208-96-8	63.5 %	64.0-108%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
EG020F: Dissolved Metals by ICP-MS	ES2245132--010	SBT-GW-1037	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	ES2245132--001	MW01	**C6 - C10 Fraction**	C6_C10	68.7 %	70.0-130%	**Recovery less than lower data quality objective**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2245132-004	SBT_GW_4005	**Dibromo-DDE**	21655-73-2	53.8 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2245132-013	SBT-GW-1048	**Dibromo-DDE**	21655-73-2	61.5 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2245132-014	SBT-GW-1063	**Dibromo-DDE**	21655-73-2	56.4 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2245132-004	SBT_GW_4005	**DEF**	78-48-8	56.9 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2245132-013	SBT-GW-1048	**DEF**	78-48-8	66.0 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2245132-014	SBT-GW-1063	**DEF**	78-48-8	57.8 %	66.5-111 %	**Recovery less than lower data quality objective**
EP075S: Acid Extractable Surrogates	ES2245132-004	SBT_GW_4005	**Phenol-d6**	13127-88-3	2.5 %	10.0-69.0 %	**Recovery less than lower data quality objective**
EP075S: Acid Extractable Surrogates	ES2245132-004	SBT_GW_4005	**2-Chlorophenol-D4**	93951-73-6	1.7 %	20.9-130 %	**Recovery less than lower data quality objective**
EP075S: Acid Extractable Surrogates	ES2245132-004	SBT_GW_4005	**2.4.6-Tribromophenol**	118-79-6	1.1 %	10.0-151 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA005P: pH by PC Titrator						

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA005P: pH by PC Titrator - Analysis Holding Time Compliance						
Clear Plastic Bottle - Natural						
MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	----	----	----	15-Dec-2022	13-Dec-2022	**2**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	37	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	37	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**15-Dec-2022**	13-Dec-2022	×
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P)							
MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**15-Dec-2022**	10-Jan-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**19-Dec-2022**	20-Dec-2022	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**15-Dec-2022**	27-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**15-Dec-2022**	10-Jan-2023	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**15-Dec-2022**	10-Jan-2023	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**17-Dec-2022**	10-Jan-2023	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, RINSE-131222-JP, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**17-Dec-2022**	11-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
MW01,	MW02,	**13-Dec-2022**	**15-Dec-2022**	11-Jun-2023	✓	**15-Dec-2022**	11-Jun-2023	✓
SBT_GW_4003,	SBT_GW_4005,							
SBT_GW_4014,	SBT_GW_4017,							
SBT-GW-4019,	SBT-GW-4021,							
SBT-GW-A315,	SBT-GW-1037,							
SBT-GW-1042,	SBT-GW-1043,							
SBT-GW-1048,	SBT-GW-1063,							
QC9-131222_TX								
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
MW01,	MW02,	**13-Dec-2022**	**----**	----	----	**21-Dec-2022**	10-Jan-2023	✓
SBT_GW_4003,	SBT_GW_4005,							
SBT_GW_4014,	SBT_GW_4017,							
SBT-GW-4019,	SBT-GW-4021,							
SBT-GW-A315,	SBT-GW-1037,							
SBT-GW-1042,	SBT-GW-1043,							
SBT-GW-1048,	SBT-GW-1063,							
RINSE-131222-JP,	QC9-131222_TX							
EG050F: Dissolved Hexavalent Chromium								
Clear Plastic Bottle - NaOH Filtered (EG050G-F)								
SBT_GW_4005,	SBT-GW-1048	**13-Dec-2022**	**----**	----	----	**21-Dec-2022**	10-Jan-2023	✓
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
MW01,	MW02,	**13-Dec-2022**	**----**	----	----	**20-Dec-2022**	10-Jan-2023	✓
SBT_GW_4003,	SBT_GW_4005,							
SBT_GW_4014,	SBT_GW_4017,							
SBT-GW-4019,	SBT-GW-4021,							
SBT-GW-A315,	SBT-GW-1037,							
SBT-GW-1042,	SBT-GW-1043,							
SBT-GW-1048,	SBT-GW-1063,							
QC9-131222_TX								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**15-Dec-2022**	15-Dec-2022	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT-GW-1042	**13-Dec-2022**	**----**	----	----	**18-Dec-2022**	10-Jan-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**20-Dec-2022**	10-Jan-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**18-Dec-2022**	10-Jan-2023	✓	**20-Dec-2022**	10-Jan-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**18-Dec-2022**	10-Jan-2023	✓	**20-Dec-2022**	10-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**15-Dec-2022**	15-Dec-2022	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, QC9-131222_TX	**13-Dec-2022**	**----**	----	----	**19-Dec-2022**	10-Jan-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**21-Dec-2022**	28-Jan-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**21-Dec-2022**	28-Jan-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**21-Dec-2022**	28-Jan-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075)							
SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) SBT_GW_4005, SBT-GW-1048, SBT-GW-1063, RINSE-131222-JP	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**21-Dec-2022**	28-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW01, MW02, SBT_GW_4003, SBT_GW_4005, SBT_GW_4014, SBT_GW_4017, SBT-GW-4019, SBT-GW-4021, SBT-GW-A315, SBT-GW-1037, SBT-GW-1042, SBT-GW-1043, SBT-GW-1048, SBT-GW-1063, RINSE-131222-JP, QC9-131222_TX	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT_GW_4005,	SBT-GW-1048,	**13-Dec-2022**	**19-Dec-2022**	20-Dec-2022	✓	**21-Dec-2022**	28-Jan-2023	✓
SBT-GW-1063,	RINSE-131222-JP							
Amber VOC Vial - Sulfuric Acid (EP080)								
MW01,	MW02,	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓
SBT_GW_4003,	SBT_GW_4005,							
SBT_GW_4014,	SBT_GW_4017,							
SBT-GW-4019,	SBT-GW-4021,							
SBT-GW-A315,	SBT-GW-1037,							
SBT-GW-1042,	SBT-GW-1043,							
SBT-GW-1048,	SBT-GW-1063,							
RINSE-131222-JP,	QC9-131222_TX							
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
MW01,	MW02,	**13-Dec-2022**	**20-Dec-2022**	27-Dec-2022	✓	**21-Dec-2022**	27-Dec-2022	✓
SBT_GW_4003,	SBT_GW_4005,							
SBT_GW_4014,	SBT_GW_4017,							
SBT-GW-4019,	SBT-GW-4021,							
SBT-GW-A315,	SBT-GW-1037,							
SBT-GW-1042,	SBT-GW-1043,							
SBT-GW-1048,	SBT-GW-1063,							
RINSE-131222-JP,	QC9-131222_TX							
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT_GW_4005,	SBT-GW-1048,	**13-Dec-2022**	**20-Dec-2022**	11-Jun-2023	✓	**21-Dec-2022**	11-Jun-2023	✓
SBT-GW-1063,	RINSE-131222-JP							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT_GW_4005,	SBT-GW-1048,	**13-Dec-2022**	**20-Dec-2022**	11-Jun-2023	✓	**21-Dec-2022**	11-Jun-2023	✓
SBT-GW-1063,	RINSE-131222-JP							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT_GW_4005,	SBT-GW-1048,	**13-Dec-2022**	**20-Dec-2022**	11-Jun-2023	✓	**21-Dec-2022**	11-Jun-2023	✓
SBT-GW-1063,	RINSE-131222-JP							
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT_GW_4005,	SBT-GW-1048,	**13-Dec-2022**	**20-Dec-2022**	11-Jun-2023	✓	**21-Dec-2022**	11-Jun-2023	✓
SBT-GW-1063,	RINSE-131222-JP							

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	4	31	12.90	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	37	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	16	12.50	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	16	**6.25**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	37	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 9224

coffey

Consigning Office: chatswood email

Report Results to: emma stephens Mobile: emma.stephens@eratech.com.au Email: jacka.flanagan@eratech.com.au @coffey.com

Invoices to: general.admin@eratech.com Phone: cargofare@eratech.com Email: esdat_hbreports @coffey.com

Project No: 292575-4 ~~Task No:~~ QUOTE #: SY/373/22 V2

Project Name: WSA SBT Laboratory: ALS

Sampler's Name: JP + KTT TX Project Manager: EMMA STEPHENS

Special Instructions:

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Metals	Extended Suite	Bacteria monitoring	TRAD ONLY								NOTES
1	MW01	13/12		W	bottles	STD	X											
2	MW02						X											
3	SBT-GW-4003						X											
4	SBT-GW-4005						X											
5	SBT-GW-4014						X											
6	SBT-GW-4017						X											
7	SBT-GW-4019						X											
8	SBT-GW-4021						X											
9	SMGW-BH-AB15						X											
10	SBT-GW-1037						X											
11	SBT-GW-1042						X											
12	SBT-GW-1043						X											
13	SBT-GW-1048						X											
14	SBT-GW-1063						X											
15	RINSE-131222-JP						X	X										
16	QC9-131222-TX						X											
~~18~~	QC10-131222-TX						X											
17	QC11-131222-TX								X									

Environmental Division Sydney
Work Order Reference
ES2245132

Telephone : +61-2-8784 8555

PLEASE SEND TO EUROFINS

RELINQUISHED BY		RECEIVED BY	
Name: Joga Pendlebury	Date: 13-12-22	Name:	Date: 13/12/22
Coffey Environments	Time:	Company: ALS	Time: 17:30
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 9225

coffey

Consigning Office: Chatswood
Report Results to: emma stephens
Invoices to: general.admin@terratech.com

~~Mobile:~~ email: emmastephens@terratech.com Email: jack.flanagan@terratech.com ~~@coffey.com~~
~~Phone:~~ cassyofarrel@terratech.com Email: esdat_labreports @coffey.com

Project No: 292575-4 ~~Task No:~~ QUOTE #: SYD/373/22/ V2
Project Name: WSA SBT Laboratory: ALS
Sampler's Name: JP+KT+TX Project Manager: EMMA STEPHENS
Special Instructions: PLEASE FORWARD QC10-131222-TX & QC12-131222-TX TO EUROFINS
Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	PFAS ONLY	NOTES
~~[illegible]~~	QC12-131222-TX	12-13		W	bottles	STD	X	PLEASE SEND 2 EUROFINS
18	TRIP BLANK	↓		↓	↓	↓		

RELINQUISHED BY		RECEIVED BY	
Name: Jorja Pendlebury	Date: 13/12/22	Name: JC	Date: 13/12/22
Coffey Environments	Time:	Company: ALS	Time: 1720
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

GOWANS PRINTING (02) 9755 3545

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2245484**	Page	: 1 of 6
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA-SBT	Date Samples Received	: 15-Dec-2022 12:15
Order number	: ----	Date Analysis Commenced	: 15-Dec-2022
C-O-C number	: ----	Issue Date	: 28-Dec-2022 17:06
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 11		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	Rinsate_121222_TX	Rinsate_131222_TX	Rinsate_141222_TX	SMGW-BH-C320	SMGW-BH-C321
			Sampling date / time	12-Dec-2022 00:00	13-Dec-2022 00:00	14-Dec-2022 00:00	14-Dec-2022 00:00	14-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245484-001	ES2245484-002	ES2245484-003	ES2245484-005	ES2245484-006
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	Rinsate_121222_TX	Rinsate_131222_TX	Rinsate_141222_TX	SMGW-BH-C320	SMGW-BH-C321
			Sampling date / time	12-Dec-2022 00:00	13-Dec-2022 00:00	14-Dec-2022 00:00	14-Dec-2022 00:00	14-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245484-001	ES2245484-002	ES2245484-003	ES2245484-005	ES2245484-006
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**111**	**109**	**116**	**122**	**115**
Toluene-D8	2037-26-5	2	%	**99.8**	**92.6**	**98.4**	**102**	**102**
4-Bromofluorobenzene	460-00-4	2	%	**100**	**89.7**	**95.4**	**97.6**	**94.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-C330	SMGW-BH-C332	SMGW-BH-C324	BH207	BH209
			Sampling date / time	14-Dec-2022 00:00	14-Dec-2022 00:00	14-Dec-2022 00:00	14-Dec-2022 00:00	14-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245484-007	ES2245484-008	ES2245484-009	ES2245484-010	ES2245484-011
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	117	126	116	111	122
Toluene-D8	2037-26-5	2	%	98.6	106	93.0	93.8	98.0
4-Bromofluorobenzene	460-00-4	2	%	97.6	104	92.2	89.6	97.8

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

QUALITY CONTROL REPORT

Work Order	: **ES2245484**	Page	: 1 of 5
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA-SBT	Date Samples Received	: 15-Dec-2022
Order number	: ----	Date Analysis Commenced	: 15-Dec-2022
C-O-C number	: ----	Issue Date	: 28-Dec-2022
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 11		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4778854)									
ES2245484-001	Rinsate_121222_TX	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
ES2245547-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.023	0.023	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.027	0.027	0.0	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4781878)									
ES2244996-014	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2245496-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	0.0003	0.0003	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4785424)									
ES2245262-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2245484-007	SMGW-BH-C330	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4785424)									
ES2245262-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2245484-007	SMGW-BH-C330	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 4785424)									
ES2245262-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2245484-007	SMGW-BH-C330	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4778854)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.0	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.9	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.6	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.3	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.0	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.3	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.5	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4781878)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.8	77.0	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4776141)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	70.9	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	84.7	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	72.3	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4780298)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	70.6	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	65.4	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	61.0	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4785424)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	78.9	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4776141)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	75.6	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	84.0	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	62.8	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4780298)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	67.0	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	68.0	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	53.8	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4785424)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	82.0	75.0	127
EP080: BTEXN (QCLot: 4785424)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	88.8	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	81.2	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	82.9	70.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 4785424) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	81.0	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	83.1	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	98.4	70.0	120

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 4778854)							
ES2245484-002	Rinsate_131222_TX	EG020A-T: Arsenic	7440-38-2	1 mg/L	97.1	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	100	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.2	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	98.0	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	99.9	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	98.1	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	96.5	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4781878)							
ES2245011-012	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	89.9	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4785424)							
ES2245262-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	96.2	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4785424)							
ES2245262-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	94.6	70.0	130
EP080: BTEXN (QCLot: 4785424)							
ES2245262-002	Anonymous	EP080: Benzene	71-43-2	25 µg/L	107	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	94.5	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	96.4	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	92.7	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	92.9	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	95.6	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2245484**	Page	: 1 of 5
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA-SBT	Date Samples Received	: 15-Dec-2022
Site	: ----	Issue Date	: 28-Dec-2022
Sampler	: JACK FLANAGAN	No. of samples received	: 11
Order number	: ----	No. of samples analysed	: 10

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
TRH - Semivolatile Fraction	0	22	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
TRH - Semivolatile Fraction	0	22	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) Rinsate_121222_TX	**12-Dec-2022**	**19-Dec-2022**	10-Jun-2023	✓	**21-Dec-2022**	10-Jun-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) Rinsate_131222_TX	**13-Dec-2022**	**19-Dec-2022**	11-Jun-2023	✓	**21-Dec-2022**	11-Jun-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) Rinsate_121222_TX	**12-Dec-2022**	**----**	----	----	**22-Dec-2022**	09-Jan-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) Rinsate_131222_TX	**13-Dec-2022**	**----**	----	----	**22-Dec-2022**	10-Jan-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) Rinsate_121222_TX	**12-Dec-2022**	**19-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
Amber Glass Bottle - Unpreserved (EP071) Rinsate_131222_TX	**13-Dec-2022**	**20-Dec-2022**	20-Dec-2022	✓	**22-Dec-2022**	29-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) Rinsate_121222_TX	**12-Dec-2022**	**23-Dec-2022**	26-Dec-2022	✓	**23-Dec-2022**	26-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080) Rinsate_131222_TX	**13-Dec-2022**	**23-Dec-2022**	27-Dec-2022	✓	**23-Dec-2022**	27-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate_121222_TX	**12-Dec-2022**	**19-Dec-2022**	19-Dec-2022	✓	**23-Dec-2022**	28-Jan-2023	✓
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate_131222_TX	**13-Dec-2022**	**20-Dec-2022**	20-Dec-2022	✓	**22-Dec-2022**	29-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate_121222_TX	**12-Dec-2022**	**23-Dec-2022**	26-Dec-2022	✓	**23-Dec-2022**	26-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate_131222_TX	**13-Dec-2022**	**23-Dec-2022**	27-Dec-2022	✓	**23-Dec-2022**	27-Dec-2022	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate_121222_TX	**12-Dec-2022**	**23-Dec-2022**	26-Dec-2022	✓	**23-Dec-2022**	26-Dec-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate_131222_TX	**13-Dec-2022**	**23-Dec-2022**	27-Dec-2022	✓	**23-Dec-2022**	27-Dec-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	22	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	22	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	*Method*	*Matrix*	*Method Descriptions*
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	Rinsate-121222-TX	12/12/22	PM	Water	Bottles	Std (5-day)				X				
2	Rinsate-131222-TX	13/12/22		Water	Bottles	Std (5-day)				X				
3	Rinsate-141222-TX	14/12/22		Water	Bottles	Std (5-day)				X				
4	TB-141222-TX	14/12/22		Water	Bottles	Std (5-day)						X		
5	SMGW-BH-C320		AM	Water	Bottles	Std (5-day)	X							
6	SMGW-BH-C321			Water	Bottles	Std (5-day)	X							
7	SMGW-BH-C330			Water	Bottles	Std (5-day)	X							
8	SMGW-BH-C332			Water	Bottles	Std (5-day)	X							
9	SMGW-BH-C324			Water	Bottles	Std (5-day)	X							
10	BH207			Water	Bottles	Std (5-day)	X							
11	BH209			Water	Bottles	Std (5-day)	X							
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

Environmental Division Sydney
Work Order Reference
ES2245484
Telephone : + 61-2-8784 8555

RELINQUISHED BY

Name: Terry XU — Date: 14/12/2022
Coffey — Time:

Name: — Date:
Company: — Time:

RECEIVED BY

Name: Jom — Date: 15/12/22
Company: ALS — Time: 12:15pm
10.8°C

Name: — Date: 15/12/22
Company: ALS — Time: 1520

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2245622**	Page	: 1 of 40
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 15-Dec-2022 18:30
Order number	: ----	Date Analysis Commenced	: 16-Dec-2022
C-O-C number	: ----	Issue Date	: 30-Dec-2022 15:51
Sampler	: JB+KT		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 16		
No. of samples analysed	: 15		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK061G/EK067G: LOR raised for TKN/TP on sample 3 & 4 due to sample matrix.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: LOR's have been raised due to matrix interference. (High Total Dissolved Solids)
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EP080: Positive results for sample ES2245622-008 was confirmed by re-analysis.
- It has been noted that Nitrite is greater than NOx, however this difference is within the limits of experimental variation.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EK057G: It has been noted that Nitrite is greater than Nox on sample 11 & 12(Confirmed by re-analysis).
- EK057G: It has been noted that Nitrite is greater than NOX on sample 11(Confirmed by re-analysis)
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.86	6.75	7.24	7.31	7.41
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	2340	4020	28700	27900	26600
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	1500	2700	20100	19400	18200
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	251	274	1220	700	1040
Total Alkalinity as CaCO3	----	1	mg/L	251	274	1220	700	1040
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	158	360	1760	10	371
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	624	1030	8800	9230	8570
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	110	47	225	418	199
Magnesium	7439-95-4	1	mg/L	1	81	1100	526	697
Sodium	7440-23-5	1	mg/L	386	786	4560	4450	3910
Potassium	7440-09-7	1	mg/L	43	13	47	69	28
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.04	0.20	<0.10	<0.10	<0.10
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.001	<0.010	<0.010	<0.010
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0010	<0.0010	<0.0010
Chromium	7440-47-3	0.001	mg/L	0.016	<0.001	<0.010	<0.010	<0.010
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.010	<0.010	<0.010	<0.010
Copper	7440-50-8	0.001	mg/L	<0.001	0.001	<0.010	<0.010	<0.010
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.010	<0.010	<0.010
Manganese	7439-96-5	0.001	mg/L	0.070	0.985	0.053	0.067	0.567
Nickel	7440-02-0	0.001	mg/L	0.001	0.012	<0.010	<0.010	<0.010
Zinc	7440-66-6	0.005	mg/L	0.010	0.019	<0.050	<0.050	<0.050
Iron	7439-89-6	0.05	mg/L	0.28	0.37	<0.10	1.95	1.59
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	4.82	4.61	0.39	0.60	10.8
Cobalt	7440-48-4	0.001	mg/L	0.003	0.031	<0.010	<0.010	0.013

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.128	1.36	0.120	0.083	0.539
Iron	7439-89-6	0.05	mg/L	4.53	11.2	2.00	4.09	21.4
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	0.02	----	----	<0.01	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	----	----	<0.01	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.82	0.40	0.23	8.16	1.30
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.04	1.54	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.04	1.56	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.6	4.4	<1.0	8.9	1.9
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	1.6	6.0	<1.0	8.9	1.9
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.14	1.91	0.14	<0.10	0.07
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	0.06
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	25.9	42.0	309	274	270
ø Total Cations	----	0.01	meq/L	23.5	43.5	301	259	238
ø Ionic Balance	----	0.01	%	4.95	1.76	1.30	2.82	6.33
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	8	6	5	4	7
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	<0.5	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	<0.5	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	<0.5	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	<0.5	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	<2.0	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	----	<0.5	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	----	<0.5	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	----	<0.5	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	----	<2.0	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	----	<2.0	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	----	<2.0	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	----	<0.5	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	----	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	----	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	<2	----
Styrene	100-42-5	5	µg/L	<5	<5	----	<5	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	<2	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	----	<5	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	----	<5	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	----	<5	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	----	<5	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	----	<5	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	----	<5	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	----	<5	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	----	<5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	----	<50	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	----	<50	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	----	<50	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	----	<50	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	----	<5	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	----	<5	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	----	<5	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	----	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP074D: Fumigants - Continued								
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	----	<5	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	----	<5	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	----	<50	----
Chloromethane	74-87-3	50	µg/L	<50	<50	----	<50	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	----	<50	----
Bromomethane	74-83-9	50	µg/L	<50	<50	----	<50	----
Chloroethane	75-00-3	50	µg/L	<50	<50	----	<50	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	----	<50	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	----	<5	----
Iodomethane	74-88-4	5	µg/L	<5	<5	----	<5	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	----	<5	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	----	<5	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	----	<5	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	----	<5	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	----	<5	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	----	<5	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	----	<5	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	----	<5	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	----	<5	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	----	<5	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	----	<5	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	----	<5	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	----	<5	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	----	<5	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	----	<5	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	----	<5	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	----	<5	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	----	<5	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	----	<5	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	----	<5	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	----	<5	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	----	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	----	<5	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	----	<5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	----	<5	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	----	<5	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	----	<5	----
Bromoform	75-25-2	5	µg/L	<5	<5	----	<5	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	----	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	----	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	----	<0.5	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	----	<2	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	----	<2	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	----	<2	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	----	<4	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	----	<2	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	----	<2	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	----	<2	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	----	<2	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	----	<2	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	----	<2	----
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	----	<4	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	----	<2	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	----	<2	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	----	<2	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	----	<2	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	----	<2	----
Fluorene	86-73-7	2	µg/L	<2	<2	----	<2	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	----	<2	----
Anthracene	120-12-7	2	µg/L	<2	<2	----	<2	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	----	<2	----
Pyrene	129-00-0	2	µg/L	<2	<2	----	<2	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	----	<2	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	----	<2	----
Chrysene	218-01-9	2	µg/L	<2	<2	----	<2	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	----	<4	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	----	<2	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	----	<2	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	----	<2	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	----	<2	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	----	<2	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	----	<2	----
^ Sum of PAHs	----	2	µg/L	<2	<2	----	<2	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	----	<2	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	----	<2	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	----	<2	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	----	<2	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	----	<2	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	----	<10	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued								
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	----	<2	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	----	<2	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	----	<2	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	----	<4	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	----	<2	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	----	<2	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	----	<2	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	----	<2	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	----	<4	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	----	<2	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	----	<2	----
Acetophenone	98-86-2	2	µg/L	<2	<2	----	<2	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	----	<2	----
Isophorone	78-59-1	2	µg/L	<2	<2	----	<2	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	----	<4	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	----	<4	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	----	<2	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	----	<2	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	----	<2	----
Azobenzene	103-33-3	2	µg/L	<2	<2	----	<2	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	----	<2	----
Phenacetin	62-44-2	2	µg/L	<2	<2	----	<2	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	----	<2	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	----	<2	----
Pronamide	23950-58-5	2	µg/L	<2	<2	----	<2	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	----	<2	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	----	<2	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	----	<2	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	----	<2	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP075F: Haloethers - Continued								
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	----	<2	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	----	<2	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	----	<2	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	----	<2	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	----	<2	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	----	<2	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	----	<2	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	----	<2	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	----	<10	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	----	<2	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	----	<4	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	----	<2	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	----	<2	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	----	<4	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	----	<4	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	----	<2	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	----	<2	----
Carbazole	86-74-8	2	µg/L	<2	<2	----	<2	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	----	<2	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	----	<2	----
beta-BHC	319-85-7	2	µg/L	<2	<2	----	<2	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	----	<2	----
delta-BHC	319-86-8	2	µg/L	<2	<2	----	<2	----
Heptachlor	76-44-8	2	µg/L	<2	<2	----	<2	----
Aldrin	309-00-2	2	µg/L	<2	<2	----	<2	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	----	<2	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	----	<2	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	----	<2	----
Dieldrin	60-57-1	2	µg/L	<2	<2	----	<2	----
Endrin	72-20-8	2	µg/L	<2	<2	----	<2	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	----	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
4.4`-DDD	72-54-8	2	µg/L	<2	<2	----	<2	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	----	<2	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	----	<4	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	----	<4	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	----	<4	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	----	<2	----
Dimethoate	60-51-5	2	µg/L	<2	<2	----	<2	----
Diazinon	333-41-5	2	µg/L	<2	<2	----	<2	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	----	<2	----
Malathion	121-75-5	2	µg/L	<2	<2	----	<2	----
Fenthion	55-38-9	2	µg/L	<2	<2	----	<2	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	----	<2	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	----	<2	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	----	<2	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	----	<2	----
Ethion	563-12-2	2	µg/L	<2	<2	----	<2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	----	<0.01	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	----	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	<0.05	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	----	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	----	<0.01	----
EP068S: Organochlorine Pesticide Surrogate								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3006	SBT-GW-3012 A	SBT-GW-3012 B	SBT-GW-3012 C	SBT-GW-3022
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-001	ES2245622-002	ES2245622-003	ES2245622-004	ES2245622-005
				Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued								
Dibromo-DDE	21655-73-2	0.5	%	63.4	52.9	69.6	75.7	66.2
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	67.0	53.3	71.9	74.0	62.3
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	110	93.1	117	106	116
Toluene-D8	2037-26-5	5	%	104	86.3	107	93.9	103
4-Bromofluorobenzene	460-00-4	5	%	102	86.5	103	94.1	102
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	29.8	23.9	37.8	41.7	30.4
2-Chlorophenol-D4	93951-73-6	1.0	%	54.9	42.6	66.9	72.9	56.8
2.4.6-Tribromophenol	118-79-6	1.0	%	61.0	48.5	67.0	79.0	58.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	65.6	49.1	69.2	76.4	69.3
Anthracene-d10	1719-06-8	1.0	%	75.5	63.1	83.5	93.1	83.0
4-Terphenyl-d14	1718-51-0	1.0	%	80.7	67.4	87.5	94.8	82.7
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	37.8	29.0	46.8	47.3	42.5
Phenol-d6	13127-88-3	2	%	27.9	21.7	35.4	35.4	32.8
2-Chlorophenol-D4	93951-73-6	2	%	50.5	39.8	59.8	61.0	56.5
2.4.6-Tribromophenol	118-79-6	2	%	40.6	27.8	40.2	39.1	38.2
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	57.6	44.0	63.5	66.7	61.9
1.2-Dichlorobenzene-D4	2199-69-1	2	%	49.7	33.8	48.1	48.1	48.0
2-Fluorobiphenyl	321-60-8	2	%	48.6	36.9	51.8	53.7	49.2
Anthracene-d10	1719-06-8	2	%	68.9	59.9	79.8	80.8	78.1
4-Terphenyl-d14	1718-51-0	2	%	63.2	54.0	70.6	71.8	69.6
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	118	100	126	114	125
Toluene-D8	2037-26-5	2	%	111	92.0	114	100	110
4-Bromofluorobenzene	460-00-4	2	%	108	93.0	111	102	110
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	91.6	84.5	83.7	97.8	87.8
13C8-PFOA	----	0.02	%	63.7	62.2	65.4	68.0	65.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	----	7.39	----	7.07	7.36
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	27100	----	28300	37200
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	----	18000	----	19400	26400
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	<1	----	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	<1	----	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	1070	----	373	943
Total Alkalinity as CaCO3	----	1	mg/L	----	1070	----	373	943
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	407	----	1310	1300
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	8590	----	8740	11200
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	264	----	260	349
Magnesium	7439-95-4	1	mg/L	----	730	----	868	1100
Sodium	7440-23-5	1	mg/L	----	4370	----	4520	5820
Potassium	7440-09-7	1	mg/L	----	43	----	8	32
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	<0.10	----	<0.10	<0.10
Arsenic	7440-38-2	0.001	mg/L	----	<0.010	<0.001	<0.010	<0.010
Cadmium	7440-43-9	0.0001	mg/L	----	<0.0010	<0.0001	<0.0010	<0.0010
Chromium	7440-47-3	0.001	mg/L	----	<0.010	<0.001	<0.010	<0.010
Cobalt	7440-48-4	0.001	mg/L	----	<0.010	----	0.067	0.014
Copper	7440-50-8	0.001	mg/L	----	<0.010	<0.001	<0.010	<0.010
Lead	7439-92-1	0.001	mg/L	----	<0.010	<0.001	<0.010	<0.010
Manganese	7439-96-5	0.001	mg/L	----	0.239	----	10.8	3.08
Nickel	7440-02-0	0.001	mg/L	----	<0.010	<0.001	0.021	0.011
Zinc	7440-66-6	0.005	mg/L	----	<0.050	<0.005	0.082	<0.050
Iron	7439-89-6	0.05	mg/L	----	3.18	----	2.41	0.42
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	1.00	----	8.20	41.8
Cobalt	7440-48-4	0.001	mg/L	----	<0.010	----	0.068	0.053

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	----	0.276	----	9.98	3.70
Iron	7439-89-6	0.05	mg/L	----	5.32	----	10.7	66.6
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	----	3.05	----	0.90	2.39
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	----	<0.01	----	<0.01	0.02
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	----	<0.01	----	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	----	<0.01	----	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	3.7	----	1.6	9.6
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	3.7	----	1.6	9.6
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	0.30	----	0.30	3.01
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	<0.01	----	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	272	----	281	362
ø Total Cations	----	0.01	meq/L	----	264	----	281	362
ø Ionic Balance	----	0.01	%	----	1.44	----	<0.01	0.01
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	----	7	----	14	9
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	<0.5	----	----	----
beta-BHC	319-85-7	0.5	µg/L	----	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	----	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L	----	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L	----	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.5	µg/L	----	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	----	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	----	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	----	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L	----	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	----	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L	----	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	----	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	----	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	----	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	----	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	----	<0.5	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	----	<2.0	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	----	<0.5	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	----	<0.5	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	----	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L	----	<0.5	----	----	----
Diazinon	333-41-5	0.5	µg/L	----	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	<0.5	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	----	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L	----	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L	----	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	----	<0.5	----	----	----
Parathion	56-38-2	2.0	µg/L	----	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	----	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	<0.5	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	----	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Prothiofos	34643-46-4	0.5	µg/L	----	<0.5	----	----	----
Ethion	563-12-2	0.5	µg/L	----	<0.5	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	----	<0.5	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	----	<0.5	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	----	<1	----	<1	<1
Toluene	108-88-3	2	µg/L	----	<2	----	<2	<2
Ethylbenzene	100-41-4	2	µg/L	----	<2	----	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	<2	----	<2	<2
Styrene	100-42-5	5	µg/L	----	<5	----	<5	<5
ortho-Xylene	95-47-6	2	µg/L	----	<2	----	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	----	<5	----	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	----	<5	----	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	----	<5	----	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	----	<5	----	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	----	<5	----	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	----	<5	----	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	----	<5	----	<5	<5
n-Butylbenzene	104-51-8	5	µg/L	----	<5	----	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	----	<50	----	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	----	<50	----	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	----	<50	----	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	----	<50	----	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	<5	----	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	<5	----	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	----	<5	----	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	<5	----	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	<5	----	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	<5	----	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	<50	----	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Chloromethane	74-87-3	50	µg/L	----	<50	----	<50	<50
Vinyl chloride	75-01-4	50	µg/L	----	<50	----	<50	<50
Bromomethane	74-83-9	50	µg/L	----	<50	----	<50	<50
Chloroethane	75-00-3	50	µg/L	----	<50	----	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	----	<50	----	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	----	<5	----	<5	<5
Iodomethane	74-88-4	5	µg/L	----	<5	----	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	<5	----	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	----	<5	----	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	<5	----	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	<5	----	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	----	<5	----	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	----	<5	----	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	----	<5	----	<5	<5
Trichloroethene	79-01-6	5	µg/L	----	<5	----	<5	<5
Dibromomethane	74-95-3	5	µg/L	----	<5	----	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	<5	----	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	----	<5	----	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	----	<5	----	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	<5	----	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	<5	----	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	<5	----	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	<5	----	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	<5	----	<5	<5
Pentachloroethane	76-01-7	5	µg/L	----	<5	----	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	----	<5	----	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	----	<5	----	<5	<5
Bromobenzene	108-86-1	5	µg/L	----	<5	----	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	----	<5	----	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	----	<5	----	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	----	<5	----	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	----	<5	----	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP074G: Trihalomethanes - Continued								
Bromodichloromethane	75-27-4	5	µg/L	----	<5	----	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	----	<5	----	<5	<5
Bromoform	75-25-2	5	µg/L	----	<5	----	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	----	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	----	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L	----	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	----	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L	----	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	----	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L	----	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	----	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L	----	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	<0.5	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	<2	----	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	----	<2	----	<2	<2
2-Methylphenol	95-48-7	2	µg/L	----	<2	----	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	<4	----	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	----	<2	----	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	----	<2	----	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	----	<2	----	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	----	<2	----	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	<2	----	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	<2	----	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	<2	----	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
Pentachlorophenol	87-86-5	4	µg/L	----	<4	----	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	<2	----	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	----	<2	----	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	----	<2	----	<2	<2
Acenaphthylene	208-96-8	2	µg/L	----	<2	----	<2	<2
Acenaphthene	83-32-9	2	µg/L	----	<2	----	<2	<2
Fluorene	86-73-7	2	µg/L	----	<2	----	<2	<2
Phenanthrene	85-01-8	2	µg/L	----	<2	----	<2	<2
Anthracene	120-12-7	2	µg/L	----	<2	----	<2	<2
Fluoranthene	206-44-0	2	µg/L	----	<2	----	<2	<2
Pyrene	129-00-0	2	µg/L	----	<2	----	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	<2	----	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	----	<2	----	<2	<2
Chrysene	218-01-9	2	µg/L	----	<2	----	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	<4	----	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	<2	----	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	----	<2	----	<2	<2
3-Methylcholanthrene	56-49-5	2	µg/L	----	<2	----	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	<2	----	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	<2	----	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	<2	----	<2	<2
^ Sum of PAHs	----	2	µg/L	----	<2	----	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	<2	----	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	<2	----	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	----	<2	----	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	----	<2	----	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	----	<2	----	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	<10	----	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	----	<2	----	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	<2	----	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP075D: Nitrosamines - Continued								
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	<2	----	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	<4	----	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	----	<2	----	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	<2	----	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	----	<2	----	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	<2	----	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	<4	----	<4	<4
Methapyrilene	91-80-5	2	µg/L	----	<2	----	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	----	<2	----	<2	<2
Acetophenone	98-86-2	2	µg/L	----	<2	----	<2	<2
Nitrobenzene	98-95-3	2	µg/L	----	<2	----	<2	<2
Isophorone	78-59-1	2	µg/L	----	<2	----	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	<4	----	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	<4	----	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	----	<2	----	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	<2	----	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	<2	----	<2	<2
Azobenzene	103-33-3	2	µg/L	----	<2	----	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	<2	----	<2	<2
Phenacetin	62-44-2	2	µg/L	----	<2	----	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	----	<2	----	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	----	<2	----	<2	<2
Pronamide	23950-58-5	2	µg/L	----	<2	----	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	<2	----	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	----	<2	----	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	<2	----	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	<2	----	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	<2	----	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	<2	----	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	<2	----	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP075G: Chlorinated Hydrocarbons - Continued								
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	<2	----	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	<2	----	<2	<2
Hexachloroethane	67-72-1	2	µg/L	----	<2	----	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	<2	----	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	----	<2	----	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	----	<2	----	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	<10	----	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	----	<2	----	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	<4	----	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	----	<2	----	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	----	<2	----	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	----	<4	----	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	----	<4	----	<4	<4
Dibenzofuran	132-64-9	2	µg/L	----	<2	----	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	----	<2	----	<2	<2
Carbazole	86-74-8	2	µg/L	----	<2	----	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	<2	----	<2	<2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	----	<2	----	<2	<2
beta-BHC	319-85-7	2	µg/L	----	<2	----	<2	<2
gamma-BHC	58-89-9	2	µg/L	----	<2	----	<2	<2
delta-BHC	319-86-8	2	µg/L	----	<2	----	<2	<2
Heptachlor	76-44-8	2	µg/L	----	<2	----	<2	<2
Aldrin	309-00-2	2	µg/L	----	<2	----	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	----	<2	----	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	----	<2	----	<2	<2
4.4`-DDE	72-55-9	2	µg/L	----	<2	----	<2	<2
Dieldrin	60-57-1	2	µg/L	----	<2	----	<2	<2
Endrin	72-20-8	2	µg/L	----	<2	----	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	----	<2	----	<2	<2
4.4`-DDD	72-54-8	2	µg/L	----	<2	----	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	----	<2	----	<2	<2
4.4`-DDT	50-29-3	4	µg/L	----	<4	----	<4	<4

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	<4	----	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	<4	----	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	<2	----	<2	<2
Dimethoate	60-51-5	2	µg/L	----	<2	----	<2	<2
Diazinon	333-41-5	2	µg/L	----	<2	----	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	<2	----	<2	<2
Malathion	121-75-5	2	µg/L	----	<2	----	<2	<2
Fenthion	55-38-9	2	µg/L	----	<2	----	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	----	<2	----	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	----	<2	----	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	----	<2	----	<2	<2
Prothiofos	34643-46-4	2	µg/L	----	<2	----	<2	<2
Ethion	563-12-2	2	µg/L	----	<2	----	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	----	<20	**60**	<20	<20
C10 - C14 Fraction	----	50	µg/L	----	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	----	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	----	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	----	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	----	<20	**60**	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	----	<20	**60**	<20	<20
>C10 - C16 Fraction	----	100	µg/L	----	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	----	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	----	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	----	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	----	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	----	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	----	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	----	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	----	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	----	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	----	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	----	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	----	60.4	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	----	57.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC13-151222-JP	QC15-151222-JP	RINSE-151222-JP	SBT-GW-3003A	SBT-GW-3003B
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-006	ES2245622-007	ES2245622-008	ES2245622-010	ES2245622-011
				Result	Result	Result	Result	Result
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	----	110	----	115	102
Toluene-D8	2037-26-5	5	%	----	101	----	106	89.6
4-Bromofluorobenzene	460-00-4	5	%	----	100	----	104	85.8
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	----	29.3	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	----	54.4	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	----	53.0	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	----	62.8	----	----	----
Anthracene-d10	1719-06-8	1.0	%	----	74.5	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	----	77.6	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	----	36.1	----	15.5	42.2
Phenol-d6	13127-88-3	2	%	----	27.4	----	16.8	31.3
2-Chlorophenol-D4	93951-73-6	2	%	----	47.6	----	31.4	54.2
2.4.6-Tribromophenol	118-79-6	2	%	----	32.0	----	26.5	34.6
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	----	53.2	----	58.7	60.5
1.2-Dichlorobenzene-D4	2199-69-1	2	%	----	44.0	----	49.3	48.0
2-Fluorobiphenyl	321-60-8	2	%	----	45.2	----	55.0	47.0
Anthracene-d10	1719-06-8	2	%	----	73.1	----	72.0	69.2
4-Terphenyl-d14	1718-51-0	2	%	----	61.6	----	63.6	64.9
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	----	119	114	124	109
Toluene-D8	2037-26-5	2	%	----	108	109	113	95.8
4-Bromofluorobenzene	460-00-4	2	%	----	107	106	112	93.8
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	92.7	81.8	98.5	89.6	99.8
13C8-PFOA	----	0.02	%	63.2	67.8	64.3	65.5	67.8

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.45	7.32	----	7.87	4.91
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	27600	17800	----	25500	29900
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	18700	12800	----	17800	21700
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	794	881	----	542	<1
Total Alkalinity as CaCO3	----	1	mg/L	794	881	----	542	<1
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	676	1490	----	242	466
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	8800	5320	----	8750	9850
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	456	192	----	427	39
Magnesium	7439-95-4	1	mg/L	668	606	----	723	942
Sodium	7440-23-5	1	mg/L	4490	2560	----	4410	4640
Potassium	7440-09-7	1	mg/L	66	28	----	36	12
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.01	----	<0.10	3.04
Arsenic	7440-38-2	0.001	mg/L	<0.010	0.002	----	<0.010	<0.010
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0001	----	<0.0010	<0.0010
Chromium	7440-47-3	0.001	mg/L	<0.010	<0.001	----	<0.010	<0.010
Cobalt	7440-48-4	0.001	mg/L	<0.010	0.006	----	<0.010	0.210
Copper	7440-50-8	0.001	mg/L	<0.010	<0.001	----	<0.010	3.24
Lead	7439-92-1	0.001	mg/L	<0.010	<0.001	----	<0.010	0.045
Manganese	7439-96-5	0.001	mg/L	0.256	2.60	----	0.267	0.434
Nickel	7440-02-0	0.001	mg/L	<0.010	0.004	----	<0.010	0.107
Zinc	7440-66-6	0.005	mg/L	<0.050	<0.005	----	<0.050	0.207
Iron	7439-89-6	0.05	mg/L	0.85	0.55	----	<0.10	13.9
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	2.58	4.53	----	4.51	56.5
Cobalt	7440-48-4	0.001	mg/L	<0.010	0.013	----	<0.010	0.266

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.279	3.74	----	0.434	0.497
Iron	7439-89-6	0.05	mg/L	3.20	8.82	----	6.85	120
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	----	----	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	4.36	0.50	----	3.89	0.85
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	----	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	----	4.18	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.01	----	4.18	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	5.3	2.0	----	4.8	9.3
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	5.3	2.0	----	9.0	9.3
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.20	0.23	----	0.12	2.04
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	<0.01	----	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	278	199	----	263	288
ø Total Cations	----	0.01	meq/L	275	172	----	274	282
ø Ionic Balance	----	0.01	%	0.62	7.34	----	2.02	1.04
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	6	91	----	6	7
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	----	----	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	----	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	----	----	----	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	----	----	----	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	----	----	----	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	----	----	----	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	----	----	----	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----	----	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	----	----	----	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----	----	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	----	----	----	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	----	----	----	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	----	----	----	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	----	----	----	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----	----	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	----	----	----	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----	----	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----	----	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	----	----	----	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	----	----	----	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	----	----	----	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	----	----	----	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	----	----	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	----	----	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	----	----	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----	----	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	----	----	----	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	----	----	----	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	----	----	----	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----	----	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	----	----	----	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	----	----	----	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	----	----	----	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----	----	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	----	----	----	<2.0	<2.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	----	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	----	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	----	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	----	----	----	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	----	----	----	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	----	----	----	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	----	----	----	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	----	----	----	<0.5	<0.5
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	----	----	<1	<1
Toluene	108-88-3	2	µg/L	<2	----	----	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	<2	<2
Styrene	100-42-5	5	µg/L	<5	----	----	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	----	----	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	----	----	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	----	----	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	----	----	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	----	----	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	----	----	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	----	----	<5	<5
n-Butylbenzene	104-51-8	5	µg/L	<5	----	----	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	----	----	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	----	----	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	----	----	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	----	----	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	----	----	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	----	----	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	----	----	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	----	----	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP074D: Fumigants - Continued								
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	----	----	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	----	----	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	----	----	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	----	----	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	----	----	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	----	----	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	----	----	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	----	----	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	----	----	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	----	----	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	----	----	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	----	----	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	----	----	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	----	----	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	----	----	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	----	----	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	----	----	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	----	----	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	----	----	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	----	----	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
4-Chlorotoluene	106-43-4	5	µg/L	<5	----	----	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	**5**	----	----	**9**	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	----	----	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	----	----	<5	<5
Bromoform	75-25-2	5	µg/L	<5	----	----	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	----	----	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	----	----	----	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	----	----	----	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	----	----	----	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	----	----	----	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	----	----	----	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	----	----	----	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	----	----	----	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	----	----	----	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	----	----	----	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	----	----	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	----	----	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	----	----	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	----	----	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	----	----	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	----	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	----	----	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	----	----	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	----	----	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	----	----	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	----	----	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	----	----	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	----	----	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	----	----	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	----	----	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	----	----	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	----	----	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	<4	----	----	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	----	----	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	----	----	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	----	----	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	----	----	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	----	----	<2	<2
Fluorene	86-73-7	2	µg/L	<2	----	----	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	----	----	<2	<2
Anthracene	120-12-7	2	µg/L	<2	----	----	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	----	----	<2	<2
Pyrene	129-00-0	2	µg/L	<2	----	----	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	----	----	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	----	----	<2	<2
Chrysene	218-01-9	2	µg/L	<2	----	----	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	----	----	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	----	----	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	----	----	<2	<2
3-Methylcholanthrene	56-49-5	2	µg/L	<2	----	----	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	----	----	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	----	----	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	----	----	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	----	----	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	<10	<10

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued								
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	----	----	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	----	----	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	----	----	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	----	----	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	----	----	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	----	----	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	----	----	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	----	----	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	----	----	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	----	----	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	----	----	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	----	----	<2	<2
Isophorone	78-59-1	2	µg/L	<2	----	----	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	----	----	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	----	----	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	----	----	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	----	----	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	----	----	<2	<2
Azobenzene	103-33-3	2	µg/L	<2	----	----	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	----	----	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	----	----	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	----	----	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	----	----	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	----	----	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	----	----	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	----	----	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	----	----	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	----	----	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	----	----	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP075F: Haloethers - Continued								
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	----	----	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	----	----	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	----	----	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	----	----	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	----	----	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	----	----	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	----	----	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	----	----	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	----	----	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	----	----	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	----	----	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	----	----	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	----	----	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	----	----	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	----	----	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	----	----	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	----	----	<2	<2
Carbazole	86-74-8	2	µg/L	<2	----	----	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	----	----	<2	<2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	----	----	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	----	----	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	----	----	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	----	----	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	----	----	<2	<2
Aldrin	309-00-2	2	µg/L	<2	----	----	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	----	----	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	----	----	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	----	----	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	----	----	<2	<2
Endrin	72-20-8	2	µg/L	<2	----	----	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	----	----	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
4.4`-DDD	72-54-8	2	µg/L	<2	----	----	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	----	----	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	----	----	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	----	----	<2	<2
Diazinon	333-41-5	2	µg/L	<2	----	----	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	<2	<2
Malathion	121-75-5	2	µg/L	<2	----	----	<2	<2
Fenthion	55-38-9	2	µg/L	<2	----	----	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	----	----	<2	<2
Ethion	563-12-2	2	µg/L	<2	----	----	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	----	----	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	----	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	----	----	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003C	SMGW-BH-D109S	TRIP BLANK	SBT-GW-1031	SMGW-BH-A401
			Sampling date / time	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00	15-Dec-2022 00:00
Compound	CAS Number	LOR	Unit	ES2245622-012	ES2245622-013	ES2245622-014	ES2245622-015	ES2245622-016
				Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued								
Dibromo-DDE	21655-73-2	0.5	%	----	69.4	----	69.7	73.8
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	----	71.3	----	65.1	72.5
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	114	111	----	111	118
Toluene-D8	2037-26-5	5	%	105	119	----	98.7	107
4-Bromofluorobenzene	460-00-4	5	%	101	113	----	96.1	103
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	----	36.8	----	37.8	38.5
2-Chlorophenol-D4	93951-73-6	1.0	%	----	65.6	----	66.5	71.4
2.4.6-Tribromophenol	118-79-6	1.0	%	----	64.0	----	60.5	72.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	----	77.1	----	76.4	86.5
Anthracene-d10	1719-06-8	1.0	%	----	80.7	----	84.5	87.7
4-Terphenyl-d14	1718-51-0	1.0	%	----	82.2	----	85.7	89.4
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	47.6	42.4	----	44.5	49.4
Phenol-d6	13127-88-3	2	%	35.9	31.8	----	34.1	36.1
2-Chlorophenol-D4	93951-73-6	2	%	61.8	53.3	----	58.5	64.7
2.4.6-Tribromophenol	118-79-6	2	%	43.0	41.3	----	37.0	43.2
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	69.8	59.6	----	68.2	71.6
1.2-Dichlorobenzene-D4	2199-69-1	2	%	60.1	55.3	----	54.5	62.3
2-Fluorobiphenyl	321-60-8	2	%	58.9	53.0	----	56.7	62.1
Anthracene-d10	1719-06-8	2	%	84.4	72.5	----	73.8	80.6
4-Terphenyl-d14	1718-51-0	2	%	73.7	63.0	----	65.9	72.8
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	124	134	110	120	127
Toluene-D8	2037-26-5	2	%	112	128	102	105	114
4-Bromofluorobenzene	460-00-4	2	%	110	120	102	104	111
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	88.8	93.8	----	92.0	86.7
13C8-PFOA	----	0.02	%	63.5	65.5	----	65.8	60.4

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2245622**	Page	: 1 of 25
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 15-Dec-2022
Order number	: ----	Date Analysis Commenced	: 16-Dec-2022
C-O-C number	: ----	Issue Date	: 30-Dec-2022
Sampler	: JB+KT		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 16		
No. of samples analysed	: 15		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 50%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4776787)									
ES2245390-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.98	8.03	0.6	0% - 20%
ES2245611-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.19	6.20	0.2	0% - 20%
EA005P: pH by PC Titrator (QC Lot: 4776791)									
ES2245622-005	SBT-GW-3022	EA005-P: pH Value	----	0.01	pH Unit	7.41	7.41	0.0	0% - 20%
ES2245646-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.06	8.17	1.4	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4776784)									
ES2245390-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	53400	54500	2.1	0% - 20%
ES2245611-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	21200	21000	1.2	0% - 20%
ES2245622-005	SBT-GW-3022	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	26600	26800	0.9	0% - 20%
ES2245646-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	808	802	0.7	0% - 20%
ES2245287-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	35600	35200	1.1	0% - 20%
ES2245287-005	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	11000	11000	0.1	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4783697)									
ES2245611-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	5160	5060	1.9	0% - 20%
ES2245622-001	SBT-GW-3006	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1500	1480	1.0	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4783698)									
ES2245622-015	SBT-GW-1031	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	17800	18100	1.7	0% - 20%
ES2245730-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1980	2020	2.3	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4776790)									
ES2245547-011	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	292	291	0.4	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	292	291	0.4	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED037P: Alkalinity by PC Titrator (QC Lot: 4776790) - continued									
ES2245611-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	114	114	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	114	114	0.0	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4776792)									
ES2245622-005	SBT-GW-3022	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1040	1040	0.2	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	1040	1040	0.2	0% - 20%
ES2245646-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	324	314	2.9	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	324	314	2.9	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4776211)									
ES2245340-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	20	20	0.0	0% - 20%
ES2245340-010	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<10	<10	0.0	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4776219)									
ES2245698-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	671	641	4.6	0% - 20%
ES2245622-016	SMGW-BH-A401	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	466	464	0.5	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4776214)									
ES2245340-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	42	42	0.0	0% - 20%
ES2245340-010	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	38	38	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4776218)									
ES2245622-004	SBT-GW-3012 C	ED045G: Chloride	16887-00-6	1	mg/L	9230	9300	0.8	0% - 20%
ES2245698-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	1730	1730	0.2	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4781528)									
ES2245615-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	5	5	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	6	6	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	21	21	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	4	4	0.0	No Limit
ES2245616-004	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	2	2	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	6	6	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	27	27	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 4781533)									
ES2245845-004	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	2	<1	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	3	2	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	156	147	5.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED093F: Dissolved Major Cations (QC Lot: 4781533) - continued									
ES2245622-013	SMGW-BH-D109S	ED093F: Calcium	7440-70-2	1	mg/L	192	197	2.3	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	606	608	0.3	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	2560	2580	0.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	28	29	4.6	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4781529)									
ES2245615-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.052	0.050	3.8	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.08	0.09	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.77	0.82	5.6	0% - 50%
ES2245616-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.160	0.164	2.1	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.006	0.005	20.8	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.028	0.028	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.12	0.13	0.0	0% - 50%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4781532)									
ES2245845-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.127	0.129	1.1	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.064	0.064	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.011	0.010	11.2	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.09	0.08	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.50	0.50	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4781532) - continued									
ES2245622-013	SMGW-BH-D109S	EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	2.60	2.65	2.1	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.55	0.65	16.5	0% - 50%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4784817)									
ES2245605-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.001	0.002	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.294	0.295	0.4	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	10.0	10.2	1.8	0% - 20%
ES2245761-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.005	0.006	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.008	0.009	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.016	0.015	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.13	0.13	0.0	0% - 50%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4780239)									
ES2245605-004	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2245616-002	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.045	0.049	8.3	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EG020T: Total Metals by ICP-MS (QC Lot: 4780239) - continued									
ES2245616-002	Anonymous	EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.07	0.07	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.33	1.45	8.5	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4780241)									
ES2245622-011	SBT-GW-3003B	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.053	0.063	17.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	3.70	4.20	12.5	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	41.8	45.3	8.1	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	66.6	76.0	13.2	0% - 20%
ES2245628-005	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4781531)									
ES2245622-002	SBT-GW-3012 A	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4784816)									
ES2245605-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2245761-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4785757)									
ES2245605-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2245611-006	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4781610)									
ES2245611-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.32	0.31	0.0	0% - 20%
ES2245611-010	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.02	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4781612)									
ES2245622-004	SBT-GW-3012 C	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	8.16	8.42	3.1	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4776216)									
ES2245605-009	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	0.0	No Limit
ES2245622-004	SBT-GW-3012 C	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4776220)									
ES2245762-005	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2245622-016	SMGW-BH-A401	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4781611)									
ES2245616-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.06	0.06	0.0	No Limit
ES2245622-004	SBT-GW-3012 C	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4781618)									
ES2245613-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	700	721	2.9	0% - 20%
ES2245616-003	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.3	0.3	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4781620)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4781620) - continued									
ES2245622-003	SBT-GW-3012 B	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<1.0	<1.0	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4781619)									
ES2245616-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2245622-003	SBT-GW-3012 B	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.14	0.44	102	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4776217)									
ES2245619-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2245622-016	SMGW-BH-A401	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4777803)									
ES2245043-003	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	22	19	13.7	0% - 20%
ES2245622-010	SBT-GW-3003A	EP005: Total Organic Carbon	----	1	mg/L	14	13	0.0	0% - 50%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4788523)									
ES2245622-001	SBT-GW-3006	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4788523) - continued									
ES2245622-013	SMGW-BH-D109S	EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4788523)									
ES2245622-001	SBT-GW-3006	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4788523)									
ES2245622-001	SBT-GW-3006	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4788523)									
ES2245622-001	SBT-GW-3006	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4788523)									
ES2245622-001	SBT-GW-3006	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4788523) - continued									
ES2245622-001	SBT-GW-3006	EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074F: Halogenated Aromatic Compounds (QC Lot: 4788523)									
ES2245622-001	SBT-GW-3006	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4788523)									
ES2245622-001	SBT-GW-3006	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4788524)									
ES2245622-001	SBT-GW-3006	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4788524)									
ES2245622-001	SBT-GW-3006	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4788524)									
ES2245622-001	SBT-GW-3006	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2245622-013	SMGW-BH-D109S	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4776787)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA005P: pH by PC Titrator (QCLot: 4776791)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.8	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4776784)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	94.3	89.9	110
				<1	2100 µS/cm	94.2	90.2	111
				<1	58301 µS/cm	104	93.3	106
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4783697)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	93.2	87.0	109
				<10	293 mg/L	110	75.2	126
				<10	2340 mg/L	97.8	83.0	124
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4783698)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	90.6	87.0	109
				<10	293 mg/L	94.4	75.2	126
				<10	2340 mg/L	95.2	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4776790)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	98.4	81.0	111
				----	50 mg/L	112	80.0	120
ED037P: Alkalinity by PC Titrator (QCLot: 4776792)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	98.3	81.0	111
				----	50 mg/L	113	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4776211)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	108	82.0	122
				<1	500 mg/L	99.7	82.0	122
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4776219)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	111	82.0	122
				<1	500 mg/L	100	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4776214)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	100	80.9	127
				<1	1000 mg/L	98.1	80.9	127
ED045G: Chloride by Discrete Analyser (QCLot: 4776218)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED045G: Chloride by Discrete Analyser (QCLot: 4776218) - continued								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	99.2	80.9	127
				<1	1000 mg/L	98.7	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4781528)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	95.7	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	97.4	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	97.6	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	99.6	85.0	113
ED093F: Dissolved Major Cations (QCLot: 4781533)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	98.0	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	99.0	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	104	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	101	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4781529)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	93.0	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	94.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.2	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.9	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.8	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.5	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.1	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	90.5	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.3	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.0	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.6	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4781532)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	92.6	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	100	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.2	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.1	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	94.0	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.7	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.6	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	88.6	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.5	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.0	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.2	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4784817)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	92.4	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4784817) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.1	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.5	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	97.0	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.8	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.9	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.5	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.6	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.5	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.0	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4780239)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	90.5	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.8	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.9	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	92.0	85.0	117
EG020T: Total Metals by ICP-MS (QCLot: 4780241)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	91.1	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	95.3	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.4	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.6	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4781531)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.0	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4784816)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	88.4	83.0	105
EG050F: Dissolved Hexavalent Chromium (QCLot: 4785757)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	106	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4781610)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	90.0	114
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4781612)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	106	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4776216)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	107	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4776220)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	107	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4781611)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	104	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4781618)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4781618) - continued								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	89.8	69.0	101
				<0.1	1 mg/L	106	70.0	118
				<0.1	5 mg/L	93.9	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4781620)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	88.9	69.0	101
				<0.1	1 mg/L	97.3	70.0	118
				<0.1	5 mg/L	94.5	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4781619)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	94.3	71.3	126
				<0.01	0.442 mg/L	100	71.3	126
				<0.01	1 mg/L	104	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4776217)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	112	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4777803)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	104	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4787735)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	82.0	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	81.8	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	92.4	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	82.6	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	88.9	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	81.1	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	84.3	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	87.5	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	83.6	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	94.1	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	85.6	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	83.0	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	86.1	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	97.9	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	93.9	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	87.6	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	85.3	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	85.2	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	87.4	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	91.7	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	89.8	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4787735)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4787735) - continued								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	79.3	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	79.4	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.8	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	75.7	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	89.7	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	87.3	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	101	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	85.0	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	83.9	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	84.5	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	88.9	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	82.3	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	90.5	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	82.7	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	94.7	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	85.7	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	80.7	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	89.1	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	98.3	51.6	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4788523)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	102	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	102	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	102	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	100	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	99.7	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	102	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	101	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	103	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	102	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	103	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	102	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	103	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	102	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	102	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4788523)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	103	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	97.3	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	102	66.0	132

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074B: Oxygenated Compounds (QCLot: 4788523) - continued								
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	99.4	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4788523)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	101	72.8	127
EP074D: Fumigants (QCLot: 4788523)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	101	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	101	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	99.3	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	99.4	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	102	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4788523)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	97.3	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	102	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	104	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	106	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	104	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	103	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	101	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	98.5	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	102	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	102	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	102	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	101	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	102	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	101	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	102	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	102	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	101	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	102	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	102	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	98.9	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	100	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	100	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	102	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	103	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	104	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	103	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	105	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4788523)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074F: Halogenated Aromatic Compounds (QCLot: 4788523) - continued								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	102	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	102	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	104	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	103	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	108	67.0	123
EP074G: Trihalomethanes (QCLot: 4788523)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	102	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	99.6	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	97.4	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	98.0	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4787733)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	74.4	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	76.2	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	79.0	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	77.2	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	85.5	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	79.0	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	74.2	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	73.2	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	85.0	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	81.7	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	77.3	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	93.3	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	83.6	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	87.0	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.0	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	85.5	59.1	118
EP075A: Phenolic Compounds (QCLot: 4787732)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	36.3	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	58.3	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	53.1	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	51.4	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	73.6	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	69.8	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	73.6	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	71.7	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	71.9	61.4	107

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075A: Phenolic Compounds (QCLot: 4787732) - continued								
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	74.2	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	77.8	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	67.8	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4787732)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	68.5	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	76.3	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	73.5	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	81.0	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	74.3	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	77.1	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	88.3	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	90.1	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	95.7	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	93.9	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	72.3	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	97.6	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	96.5	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	92.3	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	106	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	92.2	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	94.6	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	88.8	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	87.2	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	88.4	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4787732)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	81.5	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	78.4	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	89.1	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	91.2	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	119	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	88.9	62.1	115
EP075D: Nitrosamines (QCLot: 4787732)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	65.7	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	71.4	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	52.0	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	51.0	42.0	100

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075D: Nitrosamines (QCLot: 4787732) - continued								
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	64.9	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	70.8	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	70.5	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	73.6	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	32.9	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4787732)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	49.2	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	69.1	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	72.0	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	73.1	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	79.0	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	70.3	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	65.9	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	62.8	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	74.3	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	75.6	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	63.5	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	# 56.1	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	# 58.0	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	84.8	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	76.0	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	90.6	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	89.3	57.7	110
EP075F: Haloethers (QCLot: 4787732)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	# 65.1	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	76.0	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	80.6	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	83.1	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4787732)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	65.4	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	66.2	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	67.9	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	72.7	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	81.9	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	75.6	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	79.9	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	71.3	23.5	107

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075G: Chlorinated Hydrocarbons (QCLot: 4787732) - continued								
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	80.2	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	84.7	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4787732)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	63.8	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	64.0	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	73.6	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	65.0	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	74.8	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	68.7	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	79.4	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	74.3	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4787732)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	79.8	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	76.7	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	73.9	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	82.5	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	93.1	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	92.3	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	93.9	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	94.1	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	88.6	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	91.0	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	95.6	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	89.8	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	96.8	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	101	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	91.8	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4787732)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	81.8	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	65.8	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	83.8	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	95.6	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	88.2	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	91.2	57.0	115

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075J: Organophosphorus Pesticides (QCLot: 4787732) - continued								
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	95.2	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	92.6	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	73.5	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	93.6	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	102	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4787734)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	86.0	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	79.5	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	90.8	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4788524)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	82.1	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4787734)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	68.4	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	84.5	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	69.8	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4788524)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	87.1	75.0	127
EP080: BTEXN (QCLot: 4788524)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	83.8	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	83.0	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	84.0	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	83.9	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	87.8	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	104	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4782862)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	80.8	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	78.8	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	81.4	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4782862)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	78.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	87.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.4	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4782862)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	93.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	77.4	64.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4782862) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	81.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	73.6	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4776211)							
ES2245340-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	123	70.0	130
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4776219)							
ES2245622-007	QC15-151222-JP	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4776214)							
ES2245340-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	125	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4776218)							
ES2245622-004	SBT-GW-3012 C	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4781529)							
ES2245615-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	96.8	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	99.7	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	98.2	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	95.8	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	99.0	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	101	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	98.4	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	97.2	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	101	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4781532)							
ES2245622-015	SBT-GW-1031	EG020A-F: Arsenic	7440-38-2	10 mg/L	94.7	70.0	130
		EG020A-F: Cadmium	7440-43-9	2.5 mg/L	91.0	70.0	130
		EG020A-F: Chromium	7440-47-3	10 mg/L	90.5	70.0	130
		EG020A-F: Cobalt	7440-48-4	10 mg/L	88.5	70.0	130
		EG020A-F: Copper	7440-50-8	10 mg/L	89.3	70.0	130
		EG020A-F: Lead	7439-92-1	10 mg/L	91.6	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4781532) - continued							
ES2245622-015	SBT-GW-1031	EG020A-F: Manganese	7439-96-5	10 mg/L	84.1	70.0	130
		EG020A-F: Nickel	7440-02-0	10 mg/L	86.5	70.0	130
		EG020A-F: Zinc	7440-66-6	10 mg/L	88.7	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4784817)							
ES2245605-007	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	99.4	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	94.7	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	93.8	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	95.8	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	96.5	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	91.5	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	92.0	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	94.4	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	95.2	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4780239)							
ES2245605-005	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	102	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	102	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4780241)							
ES2245622-012	SBT-GW-3003C	EG020A-T: Cobalt	7440-48-4	1 mg/L	96.8	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	87.0	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4781531)							
ES2245622-001	SBT-GW-3006	EG035F: Mercury	7439-97-6	0.01 mg/L	91.0	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4784816)							
ES2245605-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	80.4	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4785757)							
ES2245605-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	87.6	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4781610)							
ES2245611-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	109	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4781612)							
ES2245622-004	SBT-GW-3012 C	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4776216)							
ES2245605-009	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	109	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4776220)							
ES2245622-016	SMGW-BH-A401	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	90.3	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4781611)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4781611) - continued							
ES2245622-004	SBT-GW-3012 C	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	106	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4781618)							
ES2245615-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	96.5	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4781620)							
ES2245622-004	SBT-GW-3012 C	EK061G: Total Kjeldahl Nitrogen as N	----	25 mg/L	90.6	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4781619)							
ES2245622-004	SBT-GW-3012 C	EK067G: Total Phosphorus as P	----	10 mg/L	114	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4776217)							
ES2245619-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	118	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4777803)							
ES2245181-019	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	94.7	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4788523)							
ES2245622-001	SBT-GW-3006	EP074: Benzene	71-43-2	25 µg/L	96.6	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	98.6	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4788523)							
ES2245622-001	SBT-GW-3006	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	87.3	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	97.0	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4788523)							
ES2245622-001	SBT-GW-3006	EP074: Chlorobenzene	108-90-7	25 µg/L	103	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4788524)							
ES2245622-001	SBT-GW-3006	EP080: C6 - C9 Fraction	----	325 µg/L	106	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4788524)							
ES2245622-001	SBT-GW-3006	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	110	70.0	130
EP080: BTEXN (QCLot: 4788524)							
ES2245622-001	SBT-GW-3006	EP080: Benzene	71-43-2	25 µg/L	96.1	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	93.6	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.9	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	97.3	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	98.7	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	93.4	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2245622**	Page	: 1 of 18
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 292575-4 WSA SBT	Date Samples Received	: 15-Dec-2022
Site	: ----	Issue Date	: 30-Dec-2022
Sampler	: JB+KT	No. of samples received	: 16
Order number	: ----	No. of samples analysed	: 15

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075E: Nitroaromatics and Ketones	QC-4787732-002	----	**Phenacetin**	62-44-2	56.1 %	57.8-101%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4787732-002	----	**4-Aminobiphenyl**	92-67-1	58.0 %	60.1-112%	**Recovery less than lower control limit**
EP075F: Haloethers	QC-4787732-002	----	**Bis(2-chloroethyl) ether**	111-44-4	65.1 %	69.1-112%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2245622--007	QC15-151222-JP	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2245622--004	SBT-GW-3012 C	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK055G: Ammonia as N by Discrete Analyser	ES2245622--004	SBT-GW-3012 C	**Ammonia as N**	7664-41-7	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2245622-001	SBT-GW-3006	**Dibromo-DDE**	21655-73-2	63.4 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2245622-002	SBT-GW-3012 A	**Dibromo-DDE**	21655-73-2	52.9 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2245622-005	SBT-GW-3022	**Dibromo-DDE**	21655-73-2	66.2 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2245622-007	QC15-151222-JP	**Dibromo-DDE**	21655-73-2	60.4 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2245622-002	SBT-GW-3012 A	**DEF**	78-48-8	53.3 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2245622-005	SBT-GW-3022	**DEF**	78-48-8	62.3 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2245622-007	QC15-151222-JP	**DEF**	78-48-8	57.5 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2245622-015	SBT-GW-1031	**DEF**	78-48-8	65.1 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation: Date extracted	Due for extraction	Days overdue	Analysis: Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
SBT-GW-3006,	SBT-GW-3012 A,	----	----	----	19-Dec-2022	15-Dec-2022	**4**
SBT-GW-3012 B,	SBT-GW-3012 C,						
SBT-GW-3022,	QC15-151222-JP,						
SBT-GW-3003A,	SBT-GW-3003B,						
SBT-GW-3003C,	SMGW-BH-D109S,						
SBT-GW-1031,	SMGW-BH-A401						

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Regular	Rate (%): Actual	Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	17	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	20	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	12	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	17	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**19-Dec-2022**	15-Dec-2022	×
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**19-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**22-Dec-2022**	22-Dec-2022	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**19-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT-GW-3012 C		**15-Dec-2022**	**----**	----	----	**17-Dec-2022**	12-Jan-2023	✓
Clear Plastic Bottle - Natural (ED041G)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**20-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3022,							
QC15-151222-JP,	SBT-GW-3003A,							
SBT-GW-3003B,	SBT-GW-3003C,							
SMGW-BH-D109S,	SBT-GW-1031,							
SMGW-BH-A401								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**20-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**20-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**20-Dec-2022**	13-Jun-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
RINSE-151222-JP		**15-Dec-2022**	**----**	----	----	**21-Dec-2022**	13-Jun-2023	✓
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**20-Dec-2022**	13-Jun-2023	✓	**28-Dec-2022**	13-Jun-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**22-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
RINSE-151222-JP		**15-Dec-2022**	**----**	----	----	**23-Dec-2022**	12-Jan-2023	✓
EG050F: Dissolved Hexavalent Chromium								
Clear Plastic Bottle - NaOH Filtered (EG050G-F)								
SBT-GW-3006,	SBT-GW-3012 C,	**15-Dec-2022**	**----**	----	----	**22-Dec-2022**	12-Jan-2023	✓
SBT-GW-3003C								
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**28-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**17-Dec-2022**	17-Dec-2022	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**28-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**21-Dec-2022**	12-Jan-2023	✓	**23-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**21-Dec-2022**	12-Jan-2023	✓	**23-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**17-Dec-2022**	17-Dec-2022	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
EP005: Total Organic Carbon (TOC)								
Amber VOC Vial - Sulfuric Acid (EP005)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**----**	----	----	**20-Dec-2022**	12-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SMGW-BH-D109S,							
SBT-GW-1031,	SMGW-BH-A401							
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**24-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-1031,	SMGW-BH-A401							
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**24-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-1031,	SMGW-BH-A401							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074A: Monocyclic Aromatic Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP074B: Oxygenated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP074C: Sulfonated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074G: Trihalomethanes								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-1031,	SMGW-BH-A401							
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 C,	QC15-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
RINSE-151222-JP,	SBT-GW-3003A,							
SBT-GW-3003B,	SBT-GW-3003C,							
SMGW-BH-D109S,	SBT-GW-1031,							
SMGW-BH-A401								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
RINSE-151222-JP,	SBT-GW-3003A,							
SBT-GW-3003B,	SBT-GW-3003C,							
SMGW-BH-D109S,	TRIP BLANK,							
SBT-GW-1031,	SMGW-BH-A401							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**22-Dec-2022**	22-Dec-2022	✓	**28-Dec-2022**	31-Jan-2023	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
RINSE-151222-JP,	SBT-GW-3003A,							
SBT-GW-3003B,	SBT-GW-3003C,							
SMGW-BH-D109S,	SBT-GW-1031,							
SMGW-BH-A401								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
RINSE-151222-JP,	SBT-GW-3003A,							
SBT-GW-3003B,	SBT-GW-3003C,							
SMGW-BH-D109S,	TRIP BLANK,							
SBT-GW-1031,	SMGW-BH-A401							
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**29-Dec-2022**	29-Dec-2022	✓	**29-Dec-2022**	29-Dec-2022	✓
SBT-GW-3012 B,	SBT-GW-3012 C,							
SBT-GW-3022,	QC15-151222-JP,							
RINSE-151222-JP,	SBT-GW-3003A,							
SBT-GW-3003B,	SBT-GW-3003C,							
SMGW-BH-D109S,	TRIP BLANK,							
SBT-GW-1031,	SMGW-BH-A401							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**21-Dec-2022**	13-Jun-2023	✓	**23-Dec-2022**	13-Jun-2023	✓
SBT-GW-3012 C,	QC13-151222-JP,							
QC15-151222-JP,	RINSE-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**21-Dec-2022**	13-Jun-2023	✓	**23-Dec-2022**	13-Jun-2023	✓
SBT-GW-3012 C,	QC13-151222-JP,							
QC15-151222-JP,	RINSE-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**21-Dec-2022**	13-Jun-2023	✓	**23-Dec-2022**	13-Jun-2023	✓
SBT-GW-3012 C,	QC13-151222-JP,							
QC15-151222-JP,	RINSE-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT-GW-3006,	SBT-GW-3012 A,	**15-Dec-2022**	**21-Dec-2022**	13-Jun-2023	✓	**23-Dec-2022**	13-Jun-2023	✓
SBT-GW-3012 C,	QC13-151222-JP,							
QC15-151222-JP,	RINSE-151222-JP,							
SBT-GW-3003A,	SBT-GW-3003B,							
SBT-GW-3003C,	SBT-GW-1031,							
SMGW-BH-A401								

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	3	29	10.34	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	6	47	12.77	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	6	60	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	34	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	9	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	4	38	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	12	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	38	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	30	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	17	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	29	6.90	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	5	47	10.64	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	4	38	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	38	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	6	30	**20.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	47	**2.13**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	60	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Ammonia as N by Discrete analyser	EK055G	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	60	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	9	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	12	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	17	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 9226

coffey

Consigning Office: Chris Wood

Report Results to: Emma Stephens - email

~~Mobile~~: emma.stephens@ertatech.com Email: jack.flanagan@ertatech.com

Invoices to: general.admin@ertatech.com ~~Phone~~: casey.ofarrell@ertatech.com Email: esdat_lab reports@coffey.com

Project No: 292575-4 ~~Task No.~~ QUOTE # = 54/373/22 V2

Project Name: WJA SBT Laboratory: ALS

Sampler's Name: JP + KT Project Manager: Emma Stephens

Special Instructions: PLEASE FORWARD QC14 & QC16 TO EUROFINS

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	PFA ONLY (INCLUDE modified suite)	Extended Suite										NOTES
1	SBT-GW-3006	15/12		W	bottles	STD		X										
2	SBT-GW-3012 A							X										
3	SBT-GW-3012B							X										
4	SBT-GW-3012 C							X										
5	SBT-GW-3022							X										
6	QC13-151222-JP						X											
7	QC14-151222-JP						X											FORWARD TO EUROFINS
7	QC15-151222-JP							X										
7	QC16-151222-JP							X										FORWARD TO EUROFINS
8	RINSE-151222-JP								X									
9	SBT-GW-3022							X										
10	SBT-GW-3003A							X										
11	SBT-GW-3003B							X										
12	SBT-GW-3003C							X										
13	SMGW-BH-D109S							X										
14	TRIP BLANK							X										
15	SBT-GW-1031							X										
16	SMGW-BH-AH01							X										

Environmental Division
Sydney
Work Order Reference
ES2245622

Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jorja Pendlebury	Date: 15/12/22	Name:	Date: 15/12/22
Coffey Environments	Time: 11:40 am	Company: ALS	Time: 1830
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 9226

coffey

Consigning Office: Chatswood

Report Results to: Emma Stephens - email ~~Mobile~~: emma.stephens@ekratech.com Email: jack.flanagan@ekratech.com

Invoices to: general.admin@ekratech.com ~~Phone~~: caseyofarrell@ekratech.com Email: esdat_lab reports @coffey.com

Project No: 292575-4 ~~Task No.~~ QUOTE # = S4/373/22 V2

Project Name: WJA SBT Laboratory: ALS

Sampler's Name: JP + KT Project Manager: Emma Stephens

Special Instructions: PLEASE FORWARD QC14 & QC16 TO EUROFINS

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	PFA ONLY (please note PFA analysis on Batch Sheet)				NOTES
1	SBT-GW-3006	15/12		W	bottles	STD		X			
2	SBT-GW-3012 A							X			
3	SBT-GW-3012B							X			
4	SBT-GW-3012 C							X			
5	SBT-GW-3022							X			
6	QC13-151222-JP						X				
7	QC14-151222-JP						X				FORWARD TO EUROFINS
7	QC 15-151222-JP							X			
7	QC16-151222-JP							X			FORWARD TO EUROFINS
8	RINSE-151222-JP								X		
9	SBT-GW-3022							X			
10	SBT-GW-3003A							X			
11	SBT-GW-3003B							X			
12	SBT-GW-3003C							X			
13	SMGW-BH-D1095							X			
14	TRIP BLANK							X			
15	SBT-GW-1031							X			
16	SMGW-BH-A401							X			
17	SBT-GW-1022							X			

HT

Environmental Division
Sydney
Work Order Reference
ES2245622

Telephone : +61-2-8784 8555

QC14, QC16 Eurofins

RELINQUISHED BY		RECEIVED BY	
Name: Jorja Pendlebury	Date: 15/12/22	Name:	Date: 15/12/22
Coffey Environments	Time: 11:40 am	Company: ALS	Time: 1830
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

Organised By / Date:
All Samples Recieved In Good Condition ☐
Relinquished By / Date:
All Documentation is in Proper Order ☐
Courier / Courier:
Samples Received Properly Chilled ☐
WO No:
Lab. Ref/Batch No.
Attach by PO / Internal Sheet:

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CERTIFICATE OF ANALYSIS

Work Order	: **ES2246343**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE292575-4 WSA-SBT	Date Samples Received	: 21-Dec-2022 14:15
Order number	: ----	Date Analysis Commenced	: 21-Dec-2022
C-O-C number	: ----	Issue Date	: 05-Jan-2023 12:46
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: LOR's have been raised due to matrix interference. (High Total Dissolved Solids)
- It has been noted that Nitrite is greater than NOx, however this difference is within the limits of experimental variation.
- TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**4.71**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**34100**	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**27700**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**2220**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**12300**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**68**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**1640**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**5620**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**12**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**6.55**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.010	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.010	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.326**	----	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.022**	----	----	----	----
Lead	7439-92-1	0.001	mg/L	**0.017**	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**4.82**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.182**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.267**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**1.31**	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**7.10**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	----	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	----	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	----	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	----	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.362**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	----	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	----	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	----	<0.005	----	----	----
Manganese	7439-96-5	0.001	mg/L	**5.64**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**2.92**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	----	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	----	----	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.34**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.01**	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.9**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.9**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.10**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	393	----	----	----	----
ø Total Cations	----	0.01	meq/L	383	----	----	----	----
ø Ionic Balance	----	0.01	%	1.30	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	11	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Styrene	100-42-5	5	µg/L	<5	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	----	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	----	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	----	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	----	----	----	----
Bromoform	75-25-2	5	µg/L	<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	----	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	----	----	----	----
Fluorene	86-73-7	2	µg/L	<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	2	µg/L	<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	----	----	----	----
Pyrene	129-00-0	2	µg/L	<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	----	----	----	----
Chrysene	218-01-9	2	µg/L	<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	----	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	----	----	----	----
EP075E: Nitroaromatics and Ketones								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP075E: Nitroaromatics and Ketones - Continued								
2-Picoline	109-06-8	2	µg/L	<2	----	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	----	----	----	----
Isophorone	78-59-1	2	µg/L	<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	----	----	----	----
Azobenzene	103-33-3	2	µg/L	<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	----	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	----	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	----	----	----	----
EP075H: Anilines and Benzidines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP075H: Anilines and Benzidines - Continued								
Aniline	62-53-3	2	µg/L	<2	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	----	----	----	----
Carbazole	86-74-8	2	µg/L	<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	----	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	----	----	----	----
Aldrin	309-00-2	2	µg/L	<2	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	----	----	----	----
Endrin	72-20-8	2	µg/L	<2	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	----	----	----	----
Diazinon	333-41-5	2	µg/L	<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	----	----
Malathion	121-75-5	2	µg/L	<2	----	----	----	----
Fenthion	55-38-9	2	µg/L	<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP075J: Organophosphorus Pesticides - Continued								
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	----	----	----	----
Ethion	563-12-2	2	µg/L	<2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.05**	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.03**	<0.01	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.08**	<0.01	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**73.8**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**75.4**	----	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**121**	----	----	----	----
Toluene-D8	2037-26-5	5	%	**114**	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	**104**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**14.4**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**30.6**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**23.5**	----	----	----	----
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-CM-1030	RB_211222_JF	----	----	----
			Sampling date / time	21-Dec-2022 13:00	21-Dec-2022 13:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2246343-001	ES2246343-002	--------	--------	--------
				Result	Result	----	----	----
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	1.0	%	48.1	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	29.4	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	45.1	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	14.9	----	----	----	----
Phenol-d6	13127-88-3	2	%	14.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	31.1	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	16.9	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	45.7	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	34.3	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	42.2	----	----	----	----
Anthracene-d10	1719-06-8	2	%	31.0	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	45.9	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	121	107	----	----	----
Toluene-D8	2037-26-5	2	%	111	99.3	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	93.6	85.6	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	87.7	93.0	----	----	----
13C8-PFOA	----	0.02	%	86.1	82.7	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2246343**	Page	: 1 of 21
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE292575-4 WSA-SBT	Date Samples Received	: 21-Dec-2022
Order number	: ----	Date Analysis Commenced	: 21-Dec-2022
C-O-C number	: ----	Issue Date	: 05-Jan-2023
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4785983)									
ES2246343-001	SBT-CM-1030	EA005-P: pH Value	----	0.01	pH Unit	4.71	4.71	0.0	0% - 20%
EW2205967-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.84	5.84	0.0	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4785982)									
ES2246343-001	SBT-CM-1030	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	34100	34200	0.3	0% - 20%
EW2205967-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	94	96	1.8	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4791201)									
ES2246200-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	249	232	7.1	0% - 20%
ES2246201-007	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	248	253	2.1	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4785981)									
ES2246280-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	31	28	8.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	31	28	8.0	0% - 20%
ES2246343-001	SBT-CM-1030	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	<1	<1	0.0	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4786523)									
ES2246298-005	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	8	7	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 4786525)									
ES2246343-001	SBT-CM-1030	ED045G: Chloride	16887-00-6	1	mg/L	12300	12300	0.4	0% - 20%
EW2205967-005	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	31	31	0.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4792299)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED093F: Dissolved Major Cations (QC Lot: 4792299) - continued									
ES2246232-004	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	2	1	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	2	2	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	3	3	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	2	2	0.0	No Limit
ES2246288-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	5	5	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4792298)									
ES2246232-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.019	0.020	6.1	0% - 50%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.05	0.05	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.45	0.47	3.4	No Limit
ES2246288-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4796399)									
ES2246288-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.022	0.022	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4796399) - continued									
ES2246288-001	Anonymous	EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.11	0.12	0.0	0% - 50%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.13	0.13	0.0	No Limit
ES2246343-001	SBT-CM-1030	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.362	0.347	4.4	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.015	0.013	8.9	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	5.64	5.30	6.2	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.200	0.193	3.3	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.373	0.363	2.8	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	7.10	6.73	5.2	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	2.92	2.70	7.9	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4792301)									
ES2246232-006	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4792356)									
ES2245981-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2246289-002	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4796134)									
ES2246143-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<1.00	<1.00	0.0	No Limit
ES2246733-003	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4796472)									
ES2246292-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2246323-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.02	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4786520)									
ES2246213-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.01	0.0	No Limit
ES2246213-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4796473)									
ES2246292-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.48	0.49	0.0	0% - 20%
ES2246323-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.47	2.41	2.6	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4796477)									
ES2246250-007	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.9	1.0	11.5	No Limit
ES2246308-006	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.4	0.4	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4796476)									
ES2246250-007	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	1.15	1.16	0.0	0% - 20%
ES2246308-006	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.01	0.02	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4786521)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4786521) - continued									
ES2246213-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	124	129	4.1	0% - 20%
ES2246213-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	129	126	2.6	0% - 20%
EP005: Total Organic Carbon (TOC) (QC Lot: 4789082)									
ES2246306-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	<1	1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4796129)									
ES2246317-003	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4796129)									
ES2246317-003	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4796129)									
ES2246317-003	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4796129)									
ES2246317-003	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4796129)									
ES2246317-003	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4796129) - continued									
ES2246317-003	Anonymous	EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4796129)									
ES2246317-003	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4796129)									
ES2246317-003	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4796128)									
ES2246317-005	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2246317-003	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4796128)									
ES2246317-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2246317-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP080: BTEXN (QC Lot: 4796128)									
ES2246317-005	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2246317-003	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4798089)									
EP2217365-008	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP2217394-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4798089)									
EP2217365-008	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP2217394-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4798089)									
EP2217365-008	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4798089) - continued									
EP2217365-008	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP2217394-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4792761)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	79.5	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	82.9	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	102	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4792761)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	69.0	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	96.3	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	78.1	61.5	121
EA005P: pH by PC Titrator (QCLot: 4785983)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.0	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4785982)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	97.5	89.9	110
				<1	2100 µS/cm	93.8	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4791201)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	97.6	87.0	109
				<10	293 mg/L	112	75.2	126
				<10	2340 mg/L	106	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4785981)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	85.2	81.0	111
				----	50 mg/L	118	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4786523)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	96.4	82.0	122
				<1	500 mg/L	99.0	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4786525)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	104	80.9	127
				<1	1000 mg/L	104	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4792299)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	99.7	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	102	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	103	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4792298)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	95.7	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4792298) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	90.1	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	84.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.4	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	84.0	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	83.8	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.3	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.4	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	83.8	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	84.4	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	89.8	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4796399)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	87.2	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	107	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	91.9	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	104	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	95.7	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.7	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.6	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.6	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.1	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	109	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4792301)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	87.9	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4792356)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.6	77.0	111
EG050F: Dissolved Hexavalent Chromium (QCLot: 4796134)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	102	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4796472)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	94.2	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4786520)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4796473)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	101	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4796477)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	99.2	69.0	101
				<0.1	1 mg/L	95.0	70.0	118
				<0.1	5 mg/L	96.2	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4796476)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	97.5	71.3	126
				<0.01	0.442 mg/L	101	71.3	126
				<0.01	1 mg/L	110	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4786521)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	98.1	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4789082)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	83.1	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4792762)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	80.8	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	76.6	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	81.7	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	90.4	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	87.3	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	85.6	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.0	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	86.7	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	87.6	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	89.1	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	87.6	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	82.5	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	79.3	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	96.0	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	83.4	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	94.3	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	89.8	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	83.8	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	89.9	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	83.0	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	98.3	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4792762)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	79.7	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	88.4	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	44.1	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	106	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	87.7	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	91.0	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	85.2	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	103	68.4	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4792762) - continued								
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	87.6	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	85.5	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	86.4	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	101	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	108	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	87.4	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	102	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	90.0	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	98.2	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	90.1	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	90.2	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4792761)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4792761)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4796129)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	92.3	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	89.7	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	94.4	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	93.6	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	100	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	93.1	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	92.8	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	94.3	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	93.7	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	90.9	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	93.4	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	90.5	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	92.5	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	94.1	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4796129)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	87.4	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	108	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	96.5	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	102	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4796129)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	88.8	72.8	127

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074D: Fumigants (QCLot: 4796129)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	96.8	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	98.0	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	96.5	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	101	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	92.6	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4796129)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	73.3	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	79.9	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	79.8	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	83.7	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	80.9	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	84.0	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	86.9	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	83.7	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	94.9	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	93.8	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	90.8	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	89.8	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	92.3	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	94.8	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	98.9	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	91.8	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	96.1	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	95.0	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	95.0	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	91.5	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	102	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	102	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	107	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	94.4	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	91.9	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	91.3	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	93.5	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4796129)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	96.9	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	95.4	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	82.6	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	97.9	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	116	67.0	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074G: Trihalomethanes (QCLot: 4796129)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	100	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	95.6	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	96.8	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	87.5	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4792759)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	68.8	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	65.8	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	67.8	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	75.9	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	83.8	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	72.8	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	82.9	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	84.4	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	73.7	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	79.9	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	81.5	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	64.9	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	75.6	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	73.5	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	74.9	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	72.4	59.1	118
EP075A: Phenolic Compounds (QCLot: 4792758)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	29.2	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	57.1	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	53.4	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	51.4	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	67.8	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	66.9	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	69.1	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	68.0	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	71.3	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	76.2	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	77.4	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	78.9	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4792758)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	65.0	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	69.5	59.0	108

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4792758) - continued								
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	69.4	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	75.7	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	72.6	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	75.8	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	78.8	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	78.3	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	76.7	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	76.5	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	83.9	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	77.3	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	78.0	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	77.2	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	86.9	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	78.7	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	81.5	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	80.7	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	82.0	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	79.8	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4792758)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	79.7	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	79.4	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	85.6	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	81.1	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	121	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	83.1	62.1	115
EP075D: Nitrosamines (QCLot: 4792758)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	# 45.4	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	# 58.8	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	55.6	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	52.3	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	69.0	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	67.3	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	68.7	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	77.6	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	# 21.0	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4792758)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 4792758) - continued								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	43.4	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	69.8	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	70.7	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	71.9	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	80.5	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	78.1	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	78.9	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	83.1	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	75.0	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	77.2	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	79.6	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	72.0	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	71.1	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	77.6	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	81.2	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	79.2	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	82.1	57.7	110
EP075F: Haloethers (QCLot: 4792758)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	# 63.2	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	69.5	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	76.0	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	75.4	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4792758)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	60.2	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	58.5	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	59.3	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	59.8	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	63.8	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	63.7	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	62.7	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	70.2	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	72.8	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	74.9	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4792758)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	54.7	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	66.0	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	78.6	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	71.5	51.5	96.9

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075H: Anilines and Benzidines (QCLot: 4792758) - continued								
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	75.0	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	72.0	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	79.4	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	81.9	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4792758)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	77.1	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	76.5	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	75.8	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	82.4	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	79.0	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	76.6	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	77.9	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	79.6	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	78.8	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	80.0	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	80.0	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	79.6	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	77.1	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	79.7	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	79.5	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4792758)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	78.9	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	74.5	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	81.4	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	82.4	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	89.4	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	80.5	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	80.1	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	82.0	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	83.4	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	89.9	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	87.2	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4792760)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	69.9	53.7	97.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4792760) - continued								
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	97.3	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	110	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4796128)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	87.0	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4792760)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	74.6	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	88.6	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	70.4	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4796128)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	93.7	75.0	127
EP080: BTEXN (QCLot: 4796128)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	104	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	98.9	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	104	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	104	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	105	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	103	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4798089)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	80.8	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	83.6	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	77.8	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4798089)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	83.7	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	85.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	86.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	89.0	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4798089)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	92.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	79.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	92.6	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	74.8	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4786523)							
ES2246298-005	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	98.2	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4786525)							
ES2246343-001	SBT-CM-1030	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4792298)							
ES2246232-003	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	83.6	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	87.3	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	96.0	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	87.7	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	88.7	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	94.5	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	96.8	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	87.3	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	86.6	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4796399)							
ES2246288-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	120	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	108	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	119	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	110	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	113	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	105	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	118	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	112	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	109	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4792301)							
ES2246232-005	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	85.9	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4792356)							
ES2245981-005	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	75.5	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4796134)							
ES2246143-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	5 mg/L	77.2	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4796472)							
ES2246292-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	114	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4796473)							
ES2246292-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	96.9	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4796477)							
ES2246250-007	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	10 mg/L	89.1	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4796476)							
ES2246250-007	Anonymous	EK067G: Total Phosphorus as P	----	2 mg/L	104	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4789082)							
ES2246306-006	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	91.4	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4796129)							
ES2246317-003	Anonymous	EP074: Benzene	71-43-2	25 µg/L	94.3	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	98.1	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4796129)							
ES2246317-003	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	73.0	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	94.8	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4796129)							
ES2246317-003	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	98.0	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4796128)							
ES2246317-003	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	103	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4796128)							
ES2246317-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	105	70.0	130
EP080: BTEXN (QCLot: 4796128)							
ES2246317-003	Anonymous	EP080: Benzene	71-43-2	25 µg/L	110	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	102	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	111	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	108	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	110	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	121	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4798089)							
EP2217394-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	88.6	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	82.2	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	74.0	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4798089)							
EP2217394-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	82.6	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.2	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	96.0	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	89.8	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	88.0	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4798089)							
EP2217394-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	96.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	74.2	64.0	140

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4798089) - continued							
EP2217394-001	Anonymous	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	90.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	77.8	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2246343**	Page	: 1 of 14
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE292575-4 WSA-SBT	Date Samples Received	: 21-Dec-2022
Site	: ----	Issue Date	: 05-Jan-2023
Sampler	: JACK FLANAGAN	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075D: Nitrosamines	QC-4792758-002	----	**N-Nitrosomethylethylamine**	10595-95-6	45.4 %	46.0-110%	**Recovery less than lower control limit**
EP075D: Nitrosamines	QC-4792758-002	----	**N-Nitrosodiethylamine**	55-18-5	58.8 %	60.6-113%	**Recovery less than lower control limit**
EP075D: Nitrosamines	QC-4792758-002	----	**Methapyrilene**	91-80-5	21.0 %	23.3-125%	**Recovery less than lower control limit**
EP075F: Haloethers	QC-4792758-002	----	**Bis(2-chloroethyl) ether**	111-44-4	63.2 %	69.1-112%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED045G: Chloride by Discrete Analyser	ES2246343--001	SBT-CM-1030	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural						
SBT-CM-1030	----	----	----	22-Dec-2022	21-Dec-2022	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Nitrite as N by Discrete Analyser	0	20	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	0	20	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
SBT-CM-1030	21-Dec-2022	----	----	----	22-Dec-2022	21-Dec-2022	×
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P)							
SBT-CM-1030	21-Dec-2022	----	----	----	22-Dec-2022	18-Jan-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
SBT-CM-1030	21-Dec-2022	----	----	----	23-Dec-2022	28-Dec-2022	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
SBT-CM-1030	21-Dec-2022	----	----	----	22-Dec-2022	04-Jan-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
SBT-CM-1030	21-Dec-2022	----	----	----	23-Dec-2022	18-Jan-2023	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G)							
SBT-CM-1030	21-Dec-2022	----	----	----	23-Dec-2022	18-Jan-2023	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)							
SBT-CM-1030	21-Dec-2022	----	----	----	28-Dec-2022	18-Jan-2023	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
SBT-CM-1030	21-Dec-2022	----	----	----	28-Dec-2022	19-Jun-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
SBT-CM-1030, RB_211222_JF	21-Dec-2022	30-Dec-2022	19-Jun-2023	✓	03-Jan-2023	19-Jun-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
SBT-CM-1030	21-Dec-2022	----	----	----	30-Dec-2022	18-Jan-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
RB_211222_JF	21-Dec-2022	----	----	----	29-Dec-2022	18-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050G-F) SBT-CM-1030	21-Dec-2022	----	----	----	30-Dec-2022	18-Jan-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT-CM-1030	21-Dec-2022	----	----	----	03-Jan-2023	18-Jan-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT-CM-1030	21-Dec-2022	----	----	----	23-Dec-2022	23-Dec-2022	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT-CM-1030	21-Dec-2022	----	----	----	03-Jan-2023	18-Jan-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT-CM-1030	21-Dec-2022	30-Dec-2022	18-Jan-2023	✓	03-Jan-2023	18-Jan-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT-CM-1030	21-Dec-2022	30-Dec-2022	18-Jan-2023	✓	03-Jan-2023	18-Jan-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT-CM-1030	21-Dec-2022	----	----	----	23-Dec-2022	23-Dec-2022	✓
EP005: Total Organic Carbon (TOC)							
Amber VOC Vial - Sulfuric Acid (EP005) SBT-CM-1030	21-Dec-2022	----	----	----	28-Dec-2022	18-Jan-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SBT-CM-1030	21-Dec-2022	24-Dec-2022	28-Dec-2022	✓	03-Jan-2023	02-Feb-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SBT-CM-1030	21-Dec-2022	24-Dec-2022	28-Dec-2022	✓	03-Jan-2023	02-Feb-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-CM-1030	21-Dec-2022	24-Dec-2022	28-Dec-2022	✓	04-Jan-2023	02-Feb-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-CM-1030	21-Dec-2022	24-Dec-2022	28-Dec-2022	✓	04-Jan-2023	02-Feb-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-CM-1030	21-Dec-2022	24-Dec-2022	28-Dec-2022	✓	04-Jan-2023	02-Feb-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG)							
SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**04-Jan-2023**	02-Feb-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-CM-1030	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-CM-1030	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-CM-1030	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-CM-1030	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-CM-1030	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-CM-1030	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
SBT-CM-1030	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**04-Jan-2023**	02-Feb-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075)							
SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075) SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-CM-1030	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**05-Jan-2023**	02-Feb-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) SBT-CM-1030, RB_211222_JF	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**01-Jan-2023**	02-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-CM-1030, RB_211222_JF	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) SBT-CM-1030, RB_211222_JF	**21-Dec-2022**	**24-Dec-2022**	28-Dec-2022	✓	**01-Jan-2023**	02-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-CM-1030, RB_211222_JF	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) SBT-CM-1030, RB_211222_JF	**21-Dec-2022**	**03-Jan-2023**	04-Jan-2023	✓	**03-Jan-2023**	04-Jan-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) SBT-CM-1030, RB_211222_JF	**21-Dec-2022**	**04-Jan-2023**	19-Jun-2023	✓	**05-Jan-2023**	19-Jun-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) SBT-CM-1030, RB_211222_JF	**21-Dec-2022**	**04-Jan-2023**	19-Jun-2023	✓	**05-Jan-2023**	19-Jun-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) SBT-CM-1030, RB_211222_JF	**21-Dec-2022**	**04-Jan-2023**	19-Jun-2023	✓	**05-Jan-2023**	19-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
SBT-CM-1030, RB_211222_JF	**21-Dec-2022**	**04-Jan-2023**	19-Jun-2023	✓	**05-Jan-2023**	19-Jun-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	13	15.38	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Major Cations - Dissolved	ED093F	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	3	**66.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	13	**7.69**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	0	20	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	0	20	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	SBT-CM-1030	21/12/22	1.00	Water	Bottles	Std (5-day)		X						
2	RB_211222_SF	21/12/22	1.00	Water	Bottles	Std (5-day)				X				
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

Environmental Division Sydney
Work Order Reference
ES2246343

Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: J. FLANAGAN	Date: 21/12/22	Name: Dom	Date: 21/12/22
Coffey	Time: 1.00	Company: ALS	Time: 2:15pm
Name:	Date: →	Name: JC	Date: 21/12/22
Company:	Time:	Company: ALS	Time: 1415

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐ 2.6 °C

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2301276**	Page	: 1 of 30
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 16-Jan-2023 13:50
Order number	: ----	Date Analysis Commenced	: 16-Jan-2023
C-O-C number	: ----	Issue Date	: 23-Jan-2023 17:03
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 7		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG050: Poor spike recovery for Hexavalent Chromium due to matrix interferences(confirmed by re-analysis).
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG035: Poor matrix spike recovery was obtained for Mercury on sample ES2301276 # 1. Confirmed by re-analysis.
- EG020: It has been confirmed by re-digestion and re-analysis that dissolved concentration of some elements is higher than total concentration for sample ES2301276-003. For all other elements where filtered results are greater than total results, the difference is within experimental variation of the methods.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EK057G: It has been noted that Nitrite is greater than NOx on sample 7(Confirmed by re-analysis).
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	----	6.14	6.77	5.50	5.60
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	2350	8100	32900	32400
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	----	1600	4460	29000	27100
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	89	66	35	44
Total Alkalinity as CaCO3	----	1	mg/L	----	89	66	35	44
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	399	430	1560	1510
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	559	3140	11600	11300
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	15	58	186	181
Magnesium	7439-95-4	1	mg/L	----	30	348	1220	1200
Sodium	7440-23-5	1	mg/L	----	589	1580	5300	5300
Potassium	7440-09-7	1	mg/L	----	2	7	3	4
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	0.06	0.06	0.03	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	0.001	0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.006	0.001	0.001
Cobalt	7440-48-4	0.001	mg/L	----	0.018	0.096	0.297	0.297
Nickel	7440-02-0	0.001	mg/L	<0.001	0.008	0.025	0.069	0.085
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	<0.005	0.032	0.061	0.085	0.123
Manganese	7439-96-5	0.001	mg/L	----	0.178	0.574	2.13	2.05
Iron	7439-89-6	0.05	mg/L	----	1.06	0.71	4.88	2.20
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	3.76	1.61	3.53	9.66
Cobalt	7440-48-4	0.001	mg/L	----	0.025	0.031	0.315	0.318

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	----	0.233	0.200	2.28	2.21
Iron	7439-89-6	0.05	mg/L	----	5.83	1.52	10.0	14.1
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	----	<0.01	<0.01	<0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	----	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	----	0.73	0.73	0.24	0.24
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	----	0.24	0.04	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	----	0.88	0.13	0.05	0.02
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	----	1.12	0.17	0.05	0.02
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	3.7	3.0	2.5	1.4
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	4.8	3.2	2.6	1.4
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	0.64	0.19	0.48	0.15
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	25.8	98.8	360	351
ø Total Cations	----	0.01	meq/L	----	28.9	100	340	338
ø Ionic Balance	----	0.01	%	----	5.54	0.80	2.87	1.83
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	----	7	12	12	3
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	----	----	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	----	----	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	----	----	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	----	----	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	----	----	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	----	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	----	----	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	----	----	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	----	----	<2.0	<2.0	<2.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	----	----	<0.5	<0.5	<0.5
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	----	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	----	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	----	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	----	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	----	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	----	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	----	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	----	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	----	----	<1	<1	<1
Toluene	108-88-3	2	µg/L	----	----	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	----	----	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	----	<2	<2	<2
Styrene	100-42-5	5	µg/L	----	----	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	----	----	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	----	----	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	----	----	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	----	----	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	----	----	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	----	----	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	----	----	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	----	----	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	----	----	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	----	----	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	----	----	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	----	----	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	----	----	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	----	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	----	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	----	----	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	----	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	----	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	----	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	----	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	----	----	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	----	----	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	----	----	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	----	----	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	----	----	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	----	----	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	----	----	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	----	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	----	----	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	----	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	----	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	----	----	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	----	----	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	----	----	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	----	----	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	----	----	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	----	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	----	----	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	----	----	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	----	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	----	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	----	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	----	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	----	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	----	----	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	----	----	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	----	----	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	----	----	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	----	----	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	----	----	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	----	----	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	----	----	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	----	----	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	----	----	<5	<5	<5
Bromoform	75-25-2	5	µg/L	----	----	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	----	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	----	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	----	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	----	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	----	----	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	----	----	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	----	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	----	----	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	----	----	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	----	----	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	----	----	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	----	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	----	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	----	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	----	----	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	----	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	----	----	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	----	----	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	----	----	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	----	----	<2	<2	<2
Fluorene	86-73-7	2	µg/L	----	----	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	----	----	<2	<2	<2
Anthracene	120-12-7	2	µg/L	----	----	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	----	----	<2	<2	<2
Pyrene	129-00-0	2	µg/L	----	----	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	----	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	----	----	<2	<2	<2
Chrysene	218-01-9	2	µg/L	----	----	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	----	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	----	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	----	----	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	----	----	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	----	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	----	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	----	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	----	----	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	----	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	----	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	----	----	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	----	----	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	----	----	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	----	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	----	----	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	----	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	----	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	----	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	----	----	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	----	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	----	----	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	----	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	----	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	----	----	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	----	----	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	----	----	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	----	----	<2	<2	<2
Isophorone	78-59-1	2	µg/L	----	----	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	----	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	----	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	----	----	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	----	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	----	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	----	----	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	----	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	----	----	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	----	----	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	----	----	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	----	----	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	----	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	----	----	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	----	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	----	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	----	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	----	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	----	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	----	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	----	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	----	----	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	----	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	----	----	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	----	----	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	----	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	----	----	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	----	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	----	----	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	----	----	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	----	----	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	----	----	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	----	----	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	----	----	<2	<2	<2
Carbazole	86-74-8	2	µg/L	----	----	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	----	<2	<2	<2
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	----	----	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	----	----	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	----	----	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	----	----	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	----	----	<2	<2	<2
Aldrin	309-00-2	2	µg/L	----	----	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	----	----	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	----	----	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	----	----	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	----	----	<2	<2	<2
Endrin	72-20-8	2	µg/L	----	----	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	----	----	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	----	----	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	----	----	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	----	----	<4	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	----	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	----	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	----	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	----	----	<2	<2	<2
Diazinon	333-41-5	2	µg/L	----	----	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	----	<2	<2	<2
Malathion	121-75-5	2	µg/L	----	----	<2	<2	<2
Fenthion	55-38-9	2	µg/L	----	----	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	----	----	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	----	----	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	----	----	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	----	----	<2	<2	<2
Ethion	563-12-2	2	µg/L	----	----	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	<0.01	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	----	----	51.8	54.9	54.4
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	----	----	59.6	50.8	52.4
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	----	----	131	130	106
Toluene-D8	2037-26-5	5	%	----	----	113	119	88.5
4-Bromofluorobenzene	460-00-4	5	%	----	----	116	118	95.7
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	----	----	28.4	28.0	29.4
2-Chlorophenol-D4	93951-73-6	1.0	%	----	----	53.6	51.8	53.6
2.4.6-Tribromophenol	118-79-6	1.0	%	----	----	60.3	47.7	50.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	----	----	64.0	59.3	62.7
Anthracene-d10	1719-06-8	1.0	%	----	----	72.9	67.7	70.5
4-Terphenyl-d14	1718-51-0	1.0	%	----	----	74.5	68.3	73.6
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	----	----	39.3	36.4	41.5
Phenol-d6	13127-88-3	2	%	----	----	25.7	25.6	27.0
2-Chlorophenol-D4	93951-73-6	2	%	----	----	54.4	50.5	53.1
2.4.6-Tribromophenol	118-79-6	2	%	----	----	55.9	41.1	48.8
EP075T: Base/Neutral Extractable Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_160123_SF	SBT-CM-1022	SBT-GW-1016-U	SBT-GW-1016-M	SBT-GW-1016-L
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00	16-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301276-001	ES2301276-002	ES2301276-003	ES2301276-004	ES2301276-005
				Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	2	%	----	----	55.6	51.4	55.3
1.2-Dichlorobenzene-D4	2199-69-1	2	%	----	----	54.8	44.7	52.8
2-Fluorobiphenyl	321-60-8	2	%	----	----	57.4	51.3	53.9
Anthracene-d10	1719-06-8	2	%	----	----	69.0	66.4	67.2
4-Terphenyl-d14	1718-51-0	2	%	----	----	64.9	62.6	65.7
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	117	135	124	124	118
Toluene-D8	2037-26-5	2	%	104	114	118	125	96.5
4-Bromofluorobenzene	460-00-4	2	%	96.2	102	115	116	92.0
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	99.3	----	100	107	94.7
13C8-PFOA	----	0.02	%	104	----	94.3	96.5	97.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.18	6.23	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	28000	2230	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	20800	1520	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1050	90	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	1050	90	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1070	386	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	9290	504	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	428	16	----	----	----
Magnesium	7439-95-4	1	mg/L	1030	31	----	----	----
Sodium	7440-23-5	1	mg/L	4620	577	----	----	----
Potassium	7440-09-7	1	mg/L	58	3	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.05	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.002	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.002	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	0.002	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	0.006	0.017	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.011	0.008	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.020	0.033	----	----	----
Manganese	7439-96-5	0.001	mg/L	0.148	0.157	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	1.16	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.34	3.61	----	----	----
Cobalt	7440-48-4	0.001	mg/L	0.017	0.025	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	**0.289**	**0.219**	----	----	----
Iron	7439-89-6	0.05	mg/L	**18.6**	**5.61**	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	----	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.52**	**0.88**	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	**0.26**	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.42**	<0.01	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.42**	**0.16**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**2.4**	**3.7**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**2.8**	**3.9**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.84**	**0.56**	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	**0.01**	<0.01	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**305**	**24.0**	----	----	----
ø Total Cations	----	0.01	meq/L	**308**	**28.5**	----	----	----
ø Ionic Balance	----	0.01	%	**0.53**	**8.51**	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**2**	**10**	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
Styrene	100-42-5	5	µg/L	<5	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	<5	----	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	----	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	----	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	----	----	----	----
Bromoform	75-25-2	5	µg/L	<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	----	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	----	----	----	----
Fluorene	86-73-7	2	µg/L	<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	----	----	----	----
Anthracene	120-12-7	2	µg/L	<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	----	----	----	----
Pyrene	129-00-0	2	µg/L	<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	----	----	----	----
Chrysene	218-01-9	2	µg/L	<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	----	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	----	----	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	----	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	----	----	----	----
Isophorone	78-59-1	2	µg/L	<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	----	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	----	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	----	----	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	----	----	----	----
Carbazole	86-74-8	2	µg/L	<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	----	----	----	----
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	----	----	----	----
Aldrin	309-00-2	2	µg/L	<2	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	----	----	----	----
Endrin	72-20-8	2	µg/L	<2	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	----	----	----	----
Diazinon	333-41-5	2	µg/L	<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	----	----
Malathion	121-75-5	2	µg/L	<2	----	----	----	----
Fenthion	55-38-9	2	µg/L	<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	----	----	----	----
Ethion	563-12-2	2	µg/L	<2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	52.5	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	50.2	----	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	109	----	----	----	----
Toluene-D8	2037-26-5	5	%	92.3	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	96.2	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	28.9	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	53.3	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	42.3	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	60.4	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	67.7	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	69.8	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	39.8	----	----	----	----
Phenol-d6	13127-88-3	2	%	29.9	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	52.5	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	45.5	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	QC17_160123_JF	----	----	----
			Sampling date / time	16-Jan-2023 14:00	16-Jan-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2301276-006	ES2301276-007	--------	--------	--------
				Result	Result	----	----	----
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	2	%	52.6	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	48.6	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	50.9	----	----	----	----
Anthracene-d10	1719-06-8	2	%	62.8	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	62.3	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	121	128	----	----	----
Toluene-D8	2037-26-5	2	%	101	107	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	93.4	96.4	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	101	----	----	----	----
13C8-PFOA	----	0.02	%	102	----	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2301276**	Page	: 1 of 22
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 16-Jan-2023
Order number	: ----	Date Analysis Commenced	: 16-Jan-2023
C-O-C number	: ----	Issue Date	: 23-Jan-2023
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 7		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4817776)									
ES2301276-002	SBT-CM-1022	EA005-P: pH Value	----	0.01	pH Unit	6.14	6.13	0.2	0% - 20%
EW2300179-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.50	6.49	0.2	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4817777)									
EW2300183-005	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	64	64	0.0	0% - 20%
ES2301276-002	SBT-CM-1022	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	2350	2360	0.7	0% - 20%
EW2300179-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	67	67	0.0	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4823125)									
ES2301099-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	432	450	3.9	0% - 20%
ES2301312-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	296	308	3.8	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4817778)									
ES2301276-002	SBT-CM-1022	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	89	89	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	89	89	0.0	0% - 20%
EW2300179-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	5	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	5	5	0.0	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4818918)									
ES2301312-007	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	20	19	6.3	0% - 20%
ES2301276-002	SBT-CM-1022	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	399	393	1.5	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4818916)									
ES2301312-007	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	98	96	2.4	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED045G: Chloride by Discrete Analyser (QC Lot: 4818916) - continued									
ES2301276-002	SBT-CM-1022	ED045G: Chloride	16887-00-6	1	mg/L	559	542	3.1	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4823179)									
ES2301276-002	SBT-CM-1022	ED093F: Calcium	7440-70-2	1	mg/L	15	15	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	30	27	8.6	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	589	583	0.9	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	2	2	0.0	No Limit
ES2301498-008	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	2	2	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	2	2	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	8	8	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4823177)									
ES2301276-001	RB_160123_SF	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2301498-008	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.007	0.008	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.07	0.07	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.34	0.34	0.0	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4824576)									
ES2301276-002	SBT-CM-1022	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.025	0.025	0.0	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.233	0.238	2.0	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	3.76	3.84	2.1	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	5.83	5.91	1.5	0% - 20%
ES2301482-004	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.014	0.015	0.0	0% - 50%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EG020T: Total Metals by ICP-MS (QC Lot: 4824576) - continued									
ES2301482-004	Anonymous	EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.10	0.10	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.03	0.03	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4823178)									
ES2301276-002	SBT-CM-1022	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2301695-011	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4826325)									
ES2300956-021	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4825016)									
ES2301252-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.27	0.30	8.4	No Limit
ES2301277-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.04	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4818915)									
ES2301308-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.05	0.06	0.0	No Limit
ES2301276-002	SBT-CM-1022	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.24	0.24	0.0	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4825017)									
ES2301252-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	132	129	2.6	0% - 20%
ES2301277-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.83	0.84	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4825021)									
ES2301252-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	12.1	10.8	11.5	0% - 50%
ES2301277-003	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.2	1.3	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4825020)									
ES2301252-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	2.71	2.86	5.3	0% - 20%
ES2301277-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.15	0.15	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4818917)									
ES2301308-003	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	11.2	12.5	10.8	0% - 20%
ES2301276-002	SBT-CM-1022	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4817905)									
ES2301133-004	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	15	20	25.5	0% - 50%
ES2301276-003	SBT-GW-1016-U	EP005: Total Organic Carbon	----	1	mg/L	12	14	17.1	0% - 50%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4818315)									
ES2301116-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4818315) - continued									
ES2301116-001	Anonymous	EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4818315)									
ES2301116-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4818315)									
ES2301116-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4818315)									
ES2301116-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074D: Fumigants (QC Lot: 4818315) - continued									
ES2301276-006	SMGW-BH-B123	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4818315)									
ES2301116-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4818315) - continued									
ES2301276-006	SMGW-BH-B123	EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4818315)									
ES2301116-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4818315)									
ES2301116-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4818314)									
ES2301116-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4818314)									
ES2301116-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4818314)									
ES2301116-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2301276-006	SMGW-BH-B123	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4820310)									
ES2301272-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	56.4	55.2	2.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	52.8	53.7	1.8	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	10.4	9.91	4.8	0% - 20%
ES2301272-002	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	17.4	15.2	12.9	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	10.2	10.8	5.1	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	2.09	2.21	5.6	0% - 20%
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4820310)									
ES2301272-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	5.98	6.09	1.8	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	4.46	3.75	17.2	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	18.2	18.2	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	3.01	2.92	2.9	0% - 20%
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	3.2	3.1	0.0	0% - 20%
ES2301272-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	1.37	1.34	2.2	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.96	0.94	1.8	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	4.27	4.14	3.1	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.65	0.66	0.0	0% - 20%
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.6	0.6	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4820310)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4820310) - continued									
ES2301272-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2301272-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4818449)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	77.0	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	83.5	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	96.0	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4818449)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	76.1	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	94.1	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	93.8	61.5	121
EA005P: pH by PC Titrator (QCLot: 4817776)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4817777)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	94.0	89.9	110
				<1	2100 µS/cm	98.8	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4823125)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	96.1	87.0	109
				<10	293 mg/L	124	75.2	126
				<10	2340 mg/L	102	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4817778)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	98.6	81.0	111
				----	50 mg/L	105	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4818918)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	103	82.0	122
				<1	500 mg/L	99.6	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4818916)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	102	80.9	127
				<1	1000 mg/L	100.0	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4823179)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	100	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	104	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	105	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	103	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4823177)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	89.5	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4823177) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	89.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	89.2	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	88.4	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.8	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.3	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.0	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	84.5	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	91.1	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	91.4	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4824576)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	94.4	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	93.6	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.3	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	92.5	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4823178)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.0	83.0	105
EG050F: Dissolved Hexavalent Chromium (QCLot: 4826325)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	103	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4825016)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.4	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4818915)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	103	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4825017)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4825021)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	101	69.0	101
				<0.1	1 mg/L	115	70.0	118
				<0.1	5 mg/L	108	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4825020)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	98.1	71.3	126
				<0.01	0.442 mg/L	102	71.3	126
				<0.01	1 mg/L	102	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4818917)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	92.0	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4817905)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	94.4	72.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4818452)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	86.6	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	82.1	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	93.8	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	92.6	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	95.2	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	86.8	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	86.7	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	84.4	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	84.3	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	92.9	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	86.8	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	93.0	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	87.2	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	85.2	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	95.0	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	90.7	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	79.9	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	80.2	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	82.0	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	78.9	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	84.8	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4818452)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	90.0	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	76.7	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.1	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	78.1	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	88.4	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	86.6	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	89.0	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	82.6	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	82.2	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	83.9	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	77.3	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	78.9	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	85.8	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	82.8	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	88.2	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	83.7	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	79.8	74.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4818452) - continued								
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	80.6	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	73.3	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4818449)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4818449)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4818315)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	95.8	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	92.0	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	96.1	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	94.7	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	95.9	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	94.3	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	89.6	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	92.0	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	91.0	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	90.7	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	94.7	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	92.3	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	87.8	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4818315)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	88.3	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	84.3	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	84.6	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	70.7	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4818315)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	90.3	72.8	127
EP074D: Fumigants (QCLot: 4818315)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	91.8	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	93.2	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	89.9	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	86.6	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	92.4	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4818315)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	100	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	103	67.4	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4818315) - continued								
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	91.4	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	98.5	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	95.7	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	93.8	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	89.0	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	75.7	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	93.2	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	98.8	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	101	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	90.4	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	93.3	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	87.7	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	96.9	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	92.7	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	97.4	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	92.6	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	95.5	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	87.3	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	87.2	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	80.4	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	82.2	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	91.2	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	96.2	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	79.6	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	77.3	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4818315)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	96.5	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	93.6	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	93.2	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	92.3	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	90.5	67.0	123
EP074G: Trihalomethanes (QCLot: 4818315)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	97.9	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	92.7	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	85.1	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	77.0	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818451)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	67.9	50.0	94.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818451) - continued								
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	68.2	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	72.9	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	72.0	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	76.9	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	73.4	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	79.0	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	86.5	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	74.2	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	77.8	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	73.4	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	73.8	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	74.4	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	68.4	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	70.4	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	68.5	59.1	118
EP075A: Phenolic Compounds (QCLot: 4818450)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	29.2	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	57.5	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	51.6	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	55.1	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	61.6	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	59.6	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	# 60.8	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	65.8	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	68.5	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	71.7	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	71.1	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	69.6	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818450)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	62.6	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	65.8	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	71.1	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	71.4	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	70.5	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	74.0	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	78.7	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	80.7	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	77.7	64.9	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818450) - continued								
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	76.0	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	66.1	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	70.7	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	72.1	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	74.1	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	# 123	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	72.9	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	83.5	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	71.6	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	70.2	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	68.2	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4818450)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	75.8	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	78.2	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	86.7	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	78.2	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	105	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	84.0	62.1	115
EP075D: Nitrosamines (QCLot: 4818450)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	62.5	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	62.8	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	52.9	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	61.2	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	65.1	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	62.4	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	78.2	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	76.3	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	32.3	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4818450)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	# 38.4	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	69.5	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	68.6	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	# 64.4	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	72.6	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	76.0	59.5	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 4818450) - continued								
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	93.9	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	79.8	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	73.0	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	76.1	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	63.4	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	68.5	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	72.7	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	75.2	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	76.2	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	76.9	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	77.4	57.7	110
EP075F: Haloethers (QCLot: 4818450)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	# 61.6	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	# 63.6	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	73.2	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	74.4	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4818450)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	59.1	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	57.8	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	59.2	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	57.5	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	57.0	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	61.7	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	62.1	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	53.1	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	68.5	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	75.3	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4818450)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	57.7	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	63.0	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	71.6	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	74.1	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	68.8	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	75.6	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	76.4	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	72.5	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4818450)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	76.0	64.3	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075I: Organochlorine Pesticides (QCLot: 4818450) - continued								
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	75.9	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	77.1	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	76.0	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	79.1	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	77.0	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	78.3	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	74.4	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	76.8	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	81.3	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	77.1	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	73.4	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	75.8	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	80.8	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	75.4	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4818450)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	76.1	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	70.5	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	81.1	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	84.5	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	86.9	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	79.5	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	82.1	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	79.8	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	77.3	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	78.7	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	78.3	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818314)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	85.6	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818448)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	63.1	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	81.4	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	87.9	58.3	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818314)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	85.8	75.0	127

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818448)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	72.2	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	83.7	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	90.8	50.5	115
EP080: BTEXN (QCLot: 4818314)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	103	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	106	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	107	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	106	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	101	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4820310)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	84.0	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	80.4	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	74.4	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4820310)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	90.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	81.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	89.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	88.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.6	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4820310)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	77.6	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	86.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	86.4	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	79.0	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4818918)							
ES2301276-002	SBT-CM-1022	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4818916)							

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
ED045G: Chloride by Discrete Analyser (QCLot: 4818916) - continued							
ES2301276-002	SBT-CM-1022	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4823177)							
ES2301276-004	SBT-GW-1016-M	EG020A-F: Arsenic	7440-38-2	1 mg/L	97.1	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	85.6	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	90.4	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	92.3	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	91.9	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	84.9	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	91.2	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	92.0	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	90.7	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4824576)							
ES2301276-003	SBT-GW-1016-U	EG020A-T: Cobalt	7440-48-4	1 mg/L	92.8	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	92.9	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4823178)							
ES2301276-003	SBT-GW-1016-U	EG035F: Mercury	7439-97-6	0.01 mg/L	# 38.6	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4826325)							
ES2300956-021	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.5 mg/L	# 0.1	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4825016)							
ES2301252-001	Anonymous	EK055G: Ammonia as N	7664-41-7	10 mg/L	83.2	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4818915)							
ES2301276-002	SBT-CM-1022	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	104	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4825017)							
ES2301252-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4825021)							
ES2301253-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	25 mg/L	102	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4825020)							
ES2301253-001	Anonymous	EK067G: Total Phosphorus as P	----	5 mg/L	107	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4818917)							
ES2301276-002	SBT-CM-1022	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	92.5	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4817905)							
ES2301133-005	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	97.0	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4818315)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4818315) - continued							
ES2301116-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	110	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	105	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4818315)							
ES2301116-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	98.0	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	110	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4818315)							
ES2301116-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	109	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818314)							
ES2301116-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	80.7	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818314)							
ES2301116-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	87.5	70.0	130
EP080: BTEXN (QCLot: 4818314)							
ES2301116-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	96.7	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	88.4	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	97.8	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	97.7	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	97.2	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	100	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4820310)							
ES2301272-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	# Not Determined	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	# Not Determined	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	# Not Determined	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4820310)							
ES2301272-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	95.0	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	# Not Determined	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	# Not Determined	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	# Not Determined	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	# Not Determined	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4820310)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4820310) - continued							
ES2301272-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	78.6	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	80.4	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	87.6	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	77.0	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2301276**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 16-Jan-2023
Site	: ----	Issue Date	: 23-Jan-2023
Sampler	: JACK FLANAGAN	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 7

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075A: Phenolic Compounds	QC-4818450-002	----	**2.4-Dichlorophenol**	120-83-2	60.8 %	61.9-109%	**Recovery less than lower control limit**
EP075B: Polynuclear Aromatic Hydrocarbons	QC-4818450-002	----	**7.12-Dimethylbenz(a)anthracene**	57-97-6	123 %	50.0-108%	**Recovery greater than upper control limit**
EP075E: Nitroaromatics and Ketones	QC-4818450-002	----	**2-Picoline**	109-06-8	38.4 %	41.0-109%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4818450-002	----	**Isophorone**	78-59-1	64.4 %	67.6-111%	**Recovery less than lower control limit**
EP075F: Haloethers	QC-4818450-002	----	**Bis(2-chloroethyl) ether**	111-44-4	61.6 %	69.1-112%	**Recovery less than lower control limit**
EP075F: Haloethers	QC-4818450-002	----	**Bis(2-chloroethoxy) methane**	111-91-1	63.6 %	66.2-111%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2301276--002	SBT-CM-1022	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2301276--002	SBT-CM-1022	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG035F: Dissolved Mercury by FIMS	ES2301276--003	SBT-GW-1016-U	**Mercury**	7439-97-6	38.6 %	70.0-130%	**Recovery less than lower data quality objective**
EG050F: Dissolved Hexavalent Chromium	ES2300956--021	Anonymous	**Hexavalent Chromium**	18540-29-9	0.1 %	70.0-130%	**Recovery less than lower data quality objective**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	ES2301252--001	Anonymous	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	ES2301272--001	Anonymous	**Perfluorobutane sulfonic acid (PFBS)**	375-73-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	ES2301272--001	Anonymous	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	ES2301272--001	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	ES2301272--001	Anonymous	**Perfluoropentanoic acid (PFPeA)**	2706-90-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	ES2301272--001	Anonymous	**Perfluorohexanoic acid (PFHxA)**	307-24-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	ES2301272--001	Anonymous	**Perfluoroheptanoic acid (PFHpA)**	375-85-9	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP231B: Perfluoroalkyl Carboxylic Acids	ES2301272--001	Anonymous	**Perfluorooctanoic acid (PFOA)**	335-67-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2301276-003	SBT-GW-1016-U	**Dibromo-DDE**	21655-73-2	51.8 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2301276-004	SBT-GW-1016-M	**Dibromo-DDE**	21655-73-2	54.9 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2301276-005	SBT-GW-1016-L	**Dibromo-DDE**	21655-73-2	54.4 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2301276-006	SMGW-BH-B123	**Dibromo-DDE**	21655-73-2	52.5 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2301276-003	SBT-GW-1016-U	**DEF**	78-48-8	59.6 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2301276-004	SBT-GW-1016-M	**DEF**	78-48-8	50.8 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2301276-005	SBT-GW-1016-L	**DEF**	78-48-8	52.4 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2301276-006	SMGW-BH-B123	**DEF**	78-48-8	50.2 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EG050F: Dissolved Hexavalent Chromium						
Clear Plastic Bottle - Natural						
SMGW-BH-B123	----	----	----	20-Jan-2023	17-Jan-2023	**3**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP) - Continued					
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**16-Jan-2023**	16-Jan-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**16-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**19-Jan-2023**	23-Jan-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**16-Jan-2023**	30-Jan-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**17-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**17-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**19-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EG020F: Dissolved Metals by ICP-MS								
Amber Glass Bottle - Unpreserved (EG020A-F)								
RB_160123_SF		**16-Jan-2023**	**----**	----	----	**19-Jan-2023**	15-Jul-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**19-Jan-2023**	15-Jul-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**19-Jan-2023**	15-Jul-2023	✓	**19-Jan-2023**	15-Jul-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EG035F: Dissolved Mercury by FIMS								
Amber Glass Bottle - Unpreserved (EG035F)								
RB_160123_SF		**16-Jan-2023**	**----**	----	----	**23-Jan-2023**	30-Jan-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**23-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EG050F: Dissolved Hexavalent Chromium								
Clear Plastic Bottle - NaOH Filtered (EG050G-F)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**20-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
QC17_160123_JF								
Clear Plastic Bottle - Natural (EG050G-F)								
SMGW-BH-B123		**16-Jan-2023**	**----**	----	----	**20-Jan-2023**	17-Jan-2023	✗

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**21-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**17-Jan-2023**	18-Jan-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**21-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**19-Jan-2023**	13-Feb-2023	✓	**20-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**19-Jan-2023**	13-Feb-2023	✓	**20-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**17-Jan-2023**	18-Jan-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EP005: Total Organic Carbon (TOC)								
Amber VOC Vial - Sulfuric Acid (EP005)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**----**	----	----	**18-Jan-2023**	13-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-CM-1022,	SBT-GW-1016-U,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-M,	SBT-GW-1016-L,							
SMGW-BH-B123,	QC17_160123_JF							
EP074A: Monocyclic Aromatic Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP074B: Oxygenated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP074C: Sulfonated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP074G: Trihalomethanes								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1016-U,	SBT-GW-1016-M,	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
SBT-GW-1016-L,	SMGW-BH-B123							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1016-U, SBT-GW-1016-M, SBT-GW-1016-L, SMGW-BH-B123	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1016-U, SBT-GW-1016-M, SBT-GW-1016-L, SMGW-BH-B123	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1016-U, SBT-GW-1016-M, SBT-GW-1016-L, SMGW-BH-B123	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1016-U, SBT-GW-1016-M, SBT-GW-1016-L, SMGW-BH-B123	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) RB_160123_SF, SBT-CM-1022, SBT-GW-1016-U, SBT-GW-1016-M, SBT-GW-1016-L, SMGW-BH-B123, QC17_160123_JF	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB_160123_SF, SBT-CM-1022, SBT-GW-1016-U, SBT-GW-1016-M, SBT-GW-1016-L, SMGW-BH-B123, QC17_160123_JF	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) RB_160123_SF, SBT-CM-1022, SBT-GW-1016-U, SBT-GW-1016-M, SBT-GW-1016-L, SMGW-BH-B123, QC17_160123_JF	**16-Jan-2023**	**18-Jan-2023**	23-Jan-2023	✓	**23-Jan-2023**	27-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB_160123_SF, SBT-CM-1022, SBT-GW-1016-U, SBT-GW-1016-M, SBT-GW-1016-L, SMGW-BH-B123, QC17_160123_JF	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
RB_160123_SF, SBT-GW-1016-U, SBT-GW-1016-L, QC17_160123_JF	SBT-CM-1022, SBT-GW-1016-M, SMGW-BH-B123,	**16-Jan-2023**	**18-Jan-2023**	30-Jan-2023	✓	**18-Jan-2023**	30-Jan-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
RB_160123_SF, SBT-GW-1016-M, SMGW-BH-B123	SBT-GW-1016-U, SBT-GW-1016-L,	**16-Jan-2023**	**18-Jan-2023**	15-Jul-2023	✓	**19-Jan-2023**	15-Jul-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
RB_160123_SF, SBT-GW-1016-M, SMGW-BH-B123	SBT-GW-1016-U, SBT-GW-1016-L,	**16-Jan-2023**	**18-Jan-2023**	15-Jul-2023	✓	**19-Jan-2023**	15-Jul-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
RB_160123_SF, SBT-GW-1016-M, SMGW-BH-B123	SBT-GW-1016-U, SBT-GW-1016-L,	**16-Jan-2023**	**18-Jan-2023**	15-Jul-2023	✓	**19-Jan-2023**	15-Jul-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
RB_160123_SF, SBT-GW-1016-M, SMGW-BH-B123	SBT-GW-1016-U, SBT-GW-1016-L,	**16-Jan-2023**	**18-Jan-2023**	15-Jul-2023	✓	**19-Jan-2023**	15-Jul-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	20	15.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	10	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	20	15.00	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	14	**21.43**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	20	**5.00**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	RB-160123-JF	16/1	2:00	Water	Bottles	Std (5-day)				X				
2	SBT-CM-1022			Water	Bottles	Std (5-day)	X							
3	SBT-GW-1016-U			Water	Bottles	Std (5-day)		X						
4	SBT-GW-1016-M			Water	Bottles	Std (5-day)		X						
5	SBT-GW-1016-L			Water	Bottles	Std (5-day)		X						
6	SMGW-BH-B123			Water	Bottles	Std (5-day)		X						
7	QC17-160123-JF			Water	Bottles	Std (5-day)	X							
—	QC18-160123-JF			Water	Bottles	Std (5-day)	X							SEND TO EUROFINS
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

Environmental Division Sydney
Work Order Reference
ES2301276
Telephone : + 61-2-8784 8555

RELINQUISHED BY

Name: Jack.F — Date: 16/1/23
Coffey — Time: 2:00

Name: — Date: →
Company: — Time:

RECEIVED BY

Name: Dom — Date: 16/1/23
Company: ALS — Time: 1:50pm — 12.8°C

Name: Jack — Date: 16/01/23
Company: ALS — Time: 19:10

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

HT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2301451**	Page	: 1 of 11
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 17-Jan-2023 14:25
Order number	: ----	Date Analysis Commenced	: 17-Jan-2023
C-O-C number	: ----	Issue Date	: 24-Jan-2023 18:39
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG035: Poor matrix spike recovery was obtained for Mercury on sample ES2301451 # 1. Confirmed by re-analysis.
- EP080: Batch ES2301451-6 Result has been confirmed by re-analysis.
- EG020: LORs have been raised for some samples due to matrix interference (High sample salinity)
- EG035: Poor matrix spike recovery was obtained for Mercury on sample ES2301234 # 1. Confirmed by re-analysis.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1002	SBT-GW-1005	SBT-GW-1001	SBT-GW-1037	SBT-GW-1063
			Sampling date / time	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00
Compound	CAS Number	LOR	Unit	ES2301451-001	ES2301451-002	ES2301451-003	ES2301451-004	ES2301451-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	4.04	7.34	4.49	7.28	7.53
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	9350	21300	31800	16200	15900
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	6170	16900	23000	10800	10600
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	561	<1	339	480
Total Alkalinity as CaCO3	----	1	mg/L	<1	561	<1	339	480
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	186	723	459	806	807
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	3200	7100	11500	5280	5160
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	<1	271	60	51	193
Magnesium	7439-95-4	1	mg/L	169	785	1110	362	478
Sodium	7440-23-5	1	mg/L	1610	3210	5920	2840	2620
Potassium	7440-09-7	1	mg/L	3	51	23	3	18
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.52	<0.01	14.7	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.010	<0.001	0.004
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0002	0.0019	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.010	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	0.012	0.002	0.081	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.092	<0.001	0.867	0.060	0.008
Nickel	7440-02-0	0.001	mg/L	0.033	0.003	0.523	0.011	0.005
Lead	7439-92-1	0.001	mg/L	0.006	<0.001	0.021	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	0.118	0.027	1.75	0.007	0.009
Manganese	7439-96-5	0.001	mg/L	0.014	0.134	5.09	2.24	0.776
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.10	<0.05	1.75
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.79	6.38	21.3	1.06	0.49
Cobalt	7440-48-4	0.001	mg/L	0.101	0.009	0.918	0.076	0.009

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1002	SBT-GW-1005	SBT-GW-1001	SBT-GW-1037	SBT-GW-1063
			Sampling date / time	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00
Compound	CAS Number	LOR	Unit	ES2301451-001	ES2301451-002	ES2301451-003	ES2301451-004	ES2301451-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.017	1.22	5.36	2.72	0.861
Iron	7439-89-6	0.05	mg/L	0.13	7.40	1.26	5.48	5.11
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.19	0.51	0.19	0.78
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.08	0.28	3.33	0.02	0.02
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.10	0.29	3.33	0.02	0.02
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.3	0.8	1.0	0.6	1.2
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	0.4	1.1	4.3	0.6	1.2
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.62	2.94	2.52	0.64	0.66
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.02	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	94.1	226	334	172	172
ø Total Cations	----	0.01	meq/L	84.0	219	352	156	163
ø Ionic Balance	----	0.01	%	5.68	1.68	2.69	5.04	2.55
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	12	8	12	9	12
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1002	SBT-GW-1005	SBT-GW-1001	SBT-GW-1037	SBT-GW-1063
			Sampling date / time	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00
Compound	CAS Number	LOR	Unit	ES2301451-001	ES2301451-002	ES2301451-003	ES2301451-004	ES2301451-005
				Result	Result	Result	Result	Result
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup - Continued								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1002	SBT-GW-1005	SBT-GW-1001	SBT-GW-1037	SBT-GW-1063
			Sampling date / time	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00
Compound	CAS Number	LOR	Unit	ES2301451-001	ES2301451-002	ES2301451-003	ES2301451-004	ES2301451-005
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**110**	**117**	**123**	**112**	**118**
Toluene-D8	2037-26-5	2	%	**110**	**119**	**122**	**111**	**115**
4-Bromofluorobenzene	460-00-4	2	%	**111**	**118**	**120**	**110**	**117**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SBT-GW-1031	TB_170123_JF	RB_170123_JF	----
			Sampling date / time	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	----
Compound	CAS Number	LOR	Unit	ES2301451-006	ES2301451-007	ES2301451-008	ES2301451-009	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.37	7.67	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	8840	3350	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	5500	2420	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	82	113	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	82	113	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	358	41	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	2900	1110	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	57	73	----	----	----
Magnesium	7439-95-4	1	mg/L	160	68	----	----	----
Sodium	7440-23-5	1	mg/L	1530	447	----	----	----
Potassium	7440-09-7	1	mg/L	5	5	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	0.0002	<0.0001	----	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	<0.001	----
Copper	7440-50-8	0.001	mg/L	<0.001	0.001	----	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	0.052	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.021	<0.001	----	<0.001	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	<0.001	----
Zinc	7440-66-6	0.005	mg/L	0.023	<0.005	----	<0.005	----
Manganese	7439-96-5	0.001	mg/L	1.19	0.092	----	----	----
Iron	7439-89-6	0.05	mg/L	1.22	<0.05	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	9.54	2.23	----	----	----
Cobalt	7440-48-4	0.001	mg/L	0.102	0.007	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SBT-GW-1031	TB_170123_JF	RB_170123_JF	----
			Sampling date / time	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	----
Compound	CAS Number	LOR	Unit	ES2301451-006	ES2301451-007	ES2301451-008	ES2301451-009	--------
				Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	**2.00**	**0.570**	----	----	----
Iron	7439-89-6	0.05	mg/L	**31.2**	**2.84**	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	----	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.24**	**0.06**	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	**0.35**	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	**0.10**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	**0.45**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.8**	**0.4**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.8**	**0.8**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**1.58**	**0.79**	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**90.9**	**34.4**	----	----	----
ø Total Cations	----	0.01	meq/L	**82.7**	**28.8**	----	----	----
ø Ionic Balance	----	0.01	%	**4.73**	**8.88**	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**10**	**4**	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SBT-GW-1031	TB_170123_JF	RB_170123_JF	----
			Sampling date / time	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	----
Compound	CAS Number	LOR	Unit	ES2301451-006	ES2301451-007	ES2301451-008	ES2301451-009	--------
				Result	Result	Result	Result	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup - Continued								
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	**130**	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	<50	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	<100	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	**150**	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	**150**	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	<100	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	<100	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1024	SBT-GW-1031	TB_170123_JF	RB_170123_JF	----
			Sampling date / time	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	17-Jan-2023 15:00	----
Compound	CAS Number	LOR	Unit	ES2301451-006	ES2301451-007	ES2301451-008	ES2301451-009	--------
				Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	----	----	----	<0.01	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	<0.01	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**105**	**106**	**107**	**105**	----
Toluene-D8	2037-26-5	2	%	**100**	**107**	**102**	**102**	----
4-Bromofluorobenzene	460-00-4	2	%	**96.4**	**108**	**104**	**104**	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	----	----	----	**92.2**	----
13C8-PFOA	----	0.02	%	----	----	----	**97.1**	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2301451**	Page	: 1 of 12
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 17-Jan-2023
Order number	: ----	Date Analysis Commenced	: 17-Jan-2023
C-O-C number	: ----	Issue Date	: 24-Jan-2023
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4820215)									
ES2301411-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.28	5.22	1.1	0% - 20%
ES2301451-001	SBT-GW-1002	EA005-P: pH Value	----	0.01	pH Unit	4.04	4.05	0.2	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4820216)									
ES2301411-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	12700	12800	0.6	0% - 20%
EW2300205-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	136	130	4.4	0% - 20%
ES2301451-001	SBT-GW-1002	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	9350	9590	2.5	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4826220)									
ES2301352-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	14700	14700	0.3	0% - 20%
ES2301451-001	SBT-GW-1002	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	6170	5960	3.5	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4820217)									
ES2301451-001	SBT-GW-1002	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	<1	<1	0.0	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4822117)									
EW2300212-005	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	5	5	0.0	No Limit
ES2301451-001	SBT-GW-1002	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	186	186	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4822118)									
EW2300212-005	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	17	17	0.0	0% - 50%
ES2301451-001	SBT-GW-1002	ED045G: Chloride	16887-00-6	1	mg/L	3200	3180	0.6	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4825531)									
ES2301392-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	3	3	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	9	9	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED093F: Dissolved Major Cations (QC Lot: 4825531) - continued									
ES2301392-001	Anonymous	ED093F: Sodium	7440-23-5	1	mg/L	29	29	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	2	2	0.0	No Limit
ES2301863-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	19	19	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	8	8	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	25	25	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	6	6	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4825533)									
ES2301421-009	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.016	0.016	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	1.16	1.18	1.6	0% - 20%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.28	0.28	0.0	No Limit
ES2301392-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.053	0.053	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.014	0.018	18.6	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4825586)									
ES2301902-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.034	0.035	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.013	0.013	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.06	0.06	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4825586) - continued									
ES2301902-001	Anonymous	EG020A-F: Iron	7439-89-6	0.05	mg/L	0.70	0.70	0.0	0% - 20%
ES2301459-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0003	0.0002	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.162	0.144	11.8	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.544	0.507	7.0	0% - 20%
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.063	0.057	10.0	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.012	0.008	33.7	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.007	0.005	27.7	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.227	0.215	5.3	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.231	0.206	11.7	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.247	0.236	4.3	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.49	0.47	4.5	0% - 20%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	5.92	5.47	8.0	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4827211)									
ES2301431-002	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.011	0.011	0.0	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.04	0.03	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.07	0.07	0.0	No Limit
ES2301451-005	SBT-GW-1063	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.009	0.009	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.861	0.858	0.3	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.49	0.48	0.0	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	5.11	5.10	0.3	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4825532)									
ES2301392-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4825584)									
ES2301234-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2301396-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4828892)									
--------		EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	----	<0.01	0.0	No Limit
ES2301451-007	SBT-GW-1031	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4827663)									
ES2301622-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.15	0.14	0.0	0% - 50%
ES2301451-001	SBT-GW-1002	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.03	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4822116)									
ES2301451-002	SBT-GW-1005	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.0	No Limit
ES2301451-001	SBT-GW-1002	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4827664)									
ES2301453-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2301451-001	SBT-GW-1002	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.10	0.10	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4827662)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4827662) - continued									
ES2301453-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.3	0.6	69.1	No Limit
ES2301433-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	21.7	20.3	6.5	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4827661)									
ES2301455-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	2.71	2.72	0.0	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4822115)									
ES2301451-002	SBT-GW-1005	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	0.01	0.0	No Limit
ES2301451-001	SBT-GW-1002	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4820327)									
ES2301411-008	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	1	5	104	No Limit
ES2301451-005	SBT-GW-1063	EP005: Total Organic Carbon	----	1	mg/L	12	13	11.8	0% - 50%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4821501)									
ES2301451-001	SBT-GW-1002	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2301451-003	SBT-GW-1001	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4821501)									
ES2301451-001	SBT-GW-1002	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2301451-003	SBT-GW-1001	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4821501)									
ES2301451-001	SBT-GW-1002	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2301451-003	SBT-GW-1001	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4823039)									
ES2301388-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.20	0.21	0.0	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.58	0.65	10.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2301635-002	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4823039)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4823039) - continued									
ES2301388-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.07	0.07	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.27	0.30	9.6	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.26	0.28	7.8	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.13	0.14	10.2	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2301635-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4823039)									
ES2301388-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.24	0.24	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	0.20	0.23	11.1	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2301635-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4820667)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	61.5	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	74.6	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	107	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4820667)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	86.2	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	94.4	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	73.8	61.5	121
EA005P: pH by PC Titrator (QCLot: 4820215)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.8	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4820216)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	94.0	89.9	110
				<1	2100 µS/cm	99.1	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4826220)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	98.2	87.0	109
				<10	293 mg/L	105	75.2	126
				<10	2340 mg/L	103	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4820217)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	105	81.0	111
				----	50 mg/L	115	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4822117)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	106	82.0	122
				<1	500 mg/L	100	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4822118)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	98.5	80.9	127
				<1	1000 mg/L	101	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4825531)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	106	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	103	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	106	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	104	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4825533)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	88.6	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4825533) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	90.5	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	89.6	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.6	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	90.3	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.4	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.3	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	87.8	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.7	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	91.6	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	90.3	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4825586)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	85.6	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	87.8	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	89.6	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	87.2	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	86.9	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	87.5	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	86.6	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	87.4	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	86.3	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	87.6	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	85.8	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4827211)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	91.3	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	90.6	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.2	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	93.6	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4825532)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.5	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4825584)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.4	83.0	105
EG050F: Dissolved Hexavalent Chromium (QCLot: 4828892)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	100	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4827663)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	97.2	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4822116)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	100	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4827664)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4827664) - continued								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	98.5	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4827662)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	94.4	69.0	101
				<0.1	5 mg/L	98.0	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4827661)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	98.9	71.3	126
				<0.01	1 mg/L	104	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4822115)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	94.2	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4820327)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	87.4	72.0	120
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4820667)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4820667)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4820666)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	65.6	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	81.0	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	87.4	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4821501)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	93.1	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4820666)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	66.3	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	61.8	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	67.5	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4821501)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	100	75.0	127
EP080: BTEXN (QCLot: 4821501)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	88.3	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	96.6	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	105	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	106	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	105	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4823039)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	82.0	72.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4823039) - continued								
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	80.4	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	80.2	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4823039)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	80.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	93.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	85.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	84.2	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4823039)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	81.2	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	88.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	88.2	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	81.8	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4822117)							
ES2301451-001	SBT-GW-1002	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4822118)							
ES2301451-001	SBT-GW-1002	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4825533)							
ES2301421-001	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	105	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	107	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	107	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	106	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	105	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	104	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	106	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	107	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	105	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4825586)							
ES2301459-001	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	125	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	81.4	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	83.8	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	96.4	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	96.2	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	77.4	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	86.6	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	93.2	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	79.5	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4827211)							
ES2301431-003	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	94.2	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	101	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4825532)							
ES2301451-001	SBT-GW-1002	EG035F: Mercury	7439-97-6	0.01 mg/L	# 24.4	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4825584)							
ES2301234-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	# 46.4	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4828892)							
--------		EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	94.6	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4827663)							
ES2301451-001	SBT-GW-1002	EK055G: Ammonia as N	7664-41-7	1 mg/L	97.1	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4822116)							
ES2301451-001	SBT-GW-1002	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	101	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4827664)							
ES2301451-001	SBT-GW-1002	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	99.3	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4827662)							
ES2301435-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	# Not Determined	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4827661)							
ES2301435-001	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	# Not Determined	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4822115)							
ES2301451-001	SBT-GW-1002	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	93.7	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4820327)							
ES2301411-009	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	96.1	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4821501)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4821501) - continued							
ES2301451-001	SBT-GW-1002	EP080: C6 - C9 Fraction	----	325 µg/L	95.6	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4821501)							
ES2301451-001	SBT-GW-1002	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	96.1	70.0	130
EP080: BTEXN (QCLot: 4821501)							
ES2301451-001	SBT-GW-1002	EP080: Benzene	71-43-2	25 µg/L	85.9	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	91.8	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.6	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	98.2	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	99.2	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	107	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4823039)							
ES2301635-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	83.2	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	78.6	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	73.4	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4823039)							
ES2301635-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	80.6	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	85.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	95.0	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	81.8	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	80.4	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4823039)							
ES2301635-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	85.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	78.0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	83.6	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	76.8	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2301451**	Page	: 1 of 13
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 17-Jan-2023
Site	: ----	Issue Date	: 24-Jan-2023
Sampler	: JACK FLANAGAN	No. of samples received	: 9
Order number	: ----	No. of samples analysed	: 9

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2301451--001	SBT-GW-1002	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2301451--001	SBT-GW-1002	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG035F: Dissolved Mercury by FIMS	ES2301451--001	SBT-GW-1002	**Mercury**	7439-97-6	24.4 %	70.0-130%	**Recovery less than lower data quality objective**
EG035F: Dissolved Mercury by FIMS	ES2301234--001	Anonymous	**Mercury**	7439-97-6	46.4 %	70.0-130%	**Recovery less than lower data quality objective**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	ES2301435--001	Anonymous	**Total Kjeldahl Nitrogen as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK067G: Total Phosphorus as P by Discrete Analyser	ES2301435--001	Anonymous	**Total Phosphorus as P**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Total Phosphorus as P By Discrete Analyser	1	12	8.33	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)					
Total Kjeldahl Nitrogen as N By Discrete Analyser	2	18	11.11	15.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
TRH - Semivolatile Fraction	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT-GW-1002, SBT-GW-1001, SBT-GW-1063, SBT-GW-1031	SBT-GW-1005, SBT-GW-1037, SBT-GW-1024,	**17-Jan-2023**	**----**	----	----	**17-Jan-2023**	17-Jan-2023	✓
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT-GW-1002, SBT-GW-1001, SBT-GW-1063, SBT-GW-1031	SBT-GW-1005, SBT-GW-1037, SBT-GW-1024,	**17-Jan-2023**	**----**	----	----	**17-Jan-2023**	14-Feb-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT-GW-1002, SBT-GW-1001, SBT-GW-1063, SBT-GW-1031	SBT-GW-1005, SBT-GW-1037, SBT-GW-1024,	**17-Jan-2023**	**----**	----	----	**20-Jan-2023**	24-Jan-2023	✓
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT-GW-1002, SBT-GW-1001, SBT-GW-1063, SBT-GW-1031	SBT-GW-1005, SBT-GW-1037, SBT-GW-1024,	**17-Jan-2023**	**----**	----	----	**17-Jan-2023**	31-Jan-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT-GW-1002, SBT-GW-1001, SBT-GW-1063, SBT-GW-1031	SBT-GW-1005, SBT-GW-1037, SBT-GW-1024,	**17-Jan-2023**	**----**	----	----	**18-Jan-2023**	14-Feb-2023	✓
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT-GW-1002, SBT-GW-1001, SBT-GW-1063, SBT-GW-1031	SBT-GW-1005, SBT-GW-1037, SBT-GW-1024,	**17-Jan-2023**	**----**	----	----	**18-Jan-2023**	14-Feb-2023	✓
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT-GW-1002, SBT-GW-1001, SBT-GW-1063, SBT-GW-1031	SBT-GW-1005, SBT-GW-1037, SBT-GW-1024,	**17-Jan-2023**	**----**	----	----	**20-Jan-2023**	14-Feb-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Amber Glass Bottle - Unpreserved (EG020A-F)							
RB_170123_JF	**17-Jan-2023**	**----**	----	----	**20-Jan-2023**	16-Jul-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**----**	----	----	**20-Jan-2023**	16-Jul-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**20-Jan-2023**	16-Jul-2023	✓	**21-Jan-2023**	16-Jul-2023	✓
EG035F: Dissolved Mercury by FIMS							
Amber Glass Bottle - Unpreserved (EG035F)							
RB_170123_JF	**17-Jan-2023**	**----**	----	----	**24-Jan-2023**	31-Jan-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**----**	----	----	**23-Jan-2023**	14-Feb-2023	✓
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050G-F)							
SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**----**	----	----	**23-Jan-2023**	14-Feb-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**----**	----	----	**23-Jan-2023**	14-Feb-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**----**	----	----	**18-Jan-2023**	19-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**----**	----	----	**23-Jan-2023**	14-Feb-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**20-Jan-2023**	14-Feb-2023	✓	**23-Jan-2023**	14-Feb-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**20-Jan-2023**	14-Feb-2023	✓	**23-Jan-2023**	14-Feb-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**----**	----	----	**18-Jan-2023**	19-Jan-2023	✓
EP005: Total Organic Carbon (TOC)							
Amber VOC Vial - Sulfuric Acid (EP005) SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**----**	----	----	**19-Jan-2023**	14-Feb-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**20-Jan-2023**	24-Jan-2023	✓	**24-Jan-2023**	01-Mar-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031	**17-Jan-2023**	**20-Jan-2023**	24-Jan-2023	✓	**24-Jan-2023**	01-Mar-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-1002,	SBT-GW-1005,	**17-Jan-2023**	**20-Jan-2023**	24-Jan-2023	✓	**24-Jan-2023**	01-Mar-2023	✓
SBT-GW-1001,	SBT-GW-1037,							
SBT-GW-1063,	SBT-GW-1024,							
SBT-GW-1031								
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-1002,	SBT-GW-1005,	**17-Jan-2023**	**20-Jan-2023**	24-Jan-2023	✓	**24-Jan-2023**	01-Mar-2023	✓
SBT-GW-1001,	SBT-GW-1037,							
SBT-GW-1063,	SBT-GW-1024,							
SBT-GW-1031								
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1002,	SBT-GW-1005,	**17-Jan-2023**	**20-Jan-2023**	24-Jan-2023	✓	**24-Jan-2023**	01-Mar-2023	✓
SBT-GW-1001,	SBT-GW-1037,							
SBT-GW-1063,	SBT-GW-1024,							
SBT-GW-1031,	RB_170123_JF							
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1002,	SBT-GW-1005,	**17-Jan-2023**	**20-Jan-2023**	31-Jan-2023	✓	**20-Jan-2023**	31-Jan-2023	✓
SBT-GW-1001,	SBT-GW-1037,							
SBT-GW-1063,	SBT-GW-1024,							
SBT-GW-1031,	TB_170123_JF,							
RB_170123_JF								
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1002,	SBT-GW-1005,	**17-Jan-2023**	**20-Jan-2023**	24-Jan-2023	✓	**24-Jan-2023**	01-Mar-2023	✓
SBT-GW-1001,	SBT-GW-1037,							
SBT-GW-1063,	SBT-GW-1024,							
SBT-GW-1031,	RB_170123_JF							
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1002,	SBT-GW-1005,	**17-Jan-2023**	**20-Jan-2023**	31-Jan-2023	✓	**20-Jan-2023**	31-Jan-2023	✓
SBT-GW-1001,	SBT-GW-1037,							
SBT-GW-1063,	SBT-GW-1024,							
SBT-GW-1031,	TB_170123_JF,							
RB_170123_JF								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1002, SBT-GW-1005, SBT-GW-1001, SBT-GW-1037, SBT-GW-1063, SBT-GW-1024, SBT-GW-1031, TB_170123_JF, RB_170123_JF	**17-Jan-2023**	**20-Jan-2023**	31-Jan-2023	✓	**20-Jan-2023**	31-Jan-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) RB_170123_JF	**17-Jan-2023**	**19-Jan-2023**	16-Jul-2023	✓	**20-Jan-2023**	16-Jul-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) RB_170123_JF	**17-Jan-2023**	**19-Jan-2023**	16-Jul-2023	✓	**20-Jan-2023**	16-Jul-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) RB_170123_JF	**17-Jan-2023**	**19-Jan-2023**	16-Jul-2023	✓	**20-Jan-2023**	16-Jul-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) RB_170123_JF	**17-Jan-2023**	**19-Jan-2023**	16-Jul-2023	✓	**20-Jan-2023**	16-Jul-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	10	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	23	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	27	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	12	8.33	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	9	22.22	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	23	13.04	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	18	**11.11**	**15.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	12	**16.67**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	23	**4.35**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	SBT-GW-1002	17/1	3:00	Water	Bottles	Std (5-day)	X							
2	" " - 1005			Water	Bottles	Std (5-day)	X							
3	" " - 1001			Water	Bottles	Std (5-day)	X							
4	" " - 1037			Water	Bottles	Std (5-day)	X							
5	" " - 1063			Water	Bottles	Std (5-day)	X							
6	" " - 1024			Water	Bottles	Std (5-day)	X							
7	" " - 1031			Water	Bottles	Std (5-day)	X							
8	TB-170123-JF			Water	Bottles	Std (5-day)						X		
9	RB-170123-JF			Water	Bottles	Std (5-day)				X				
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

Environmental Division Sydney
Work Order Reference
ES2301451
Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: JF	Date: 17/1	Name: Dom	Date: 17/1
Coffey	Time: 3:00	Company: ALS	Time: 2:25pm
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2301641**	Page	: 1 of 11
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 18-Jan-2023 14:40
Order number	: ----	Date Analysis Commenced	: 18-Jan-2023
C-O-C number	: ----	Issue Date	: 25-Jan-2023 17:36
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 8		
No. of samples analysed	: 8		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG05G: LOR raised for Hexavalent Chromium on sample 1 due to sample matrix.
- EK061G/EK062G: LOR raised for TKN/TN on sample 2 & 3 due to sample matrix.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	MW01	BH207	BH209	QC19_180123_JF
			Sampling date / time	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301641-001	ES2301641-002	ES2301641-003	ES2301641-004	ES2301641-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.44	7.65	7.99	6.84	7.55
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	21600	24000	8040	19500	21600
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	16400	20400	4850	13400	17600
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	872	931	661	232	1010
Total Alkalinity as CaCO3	----	1	mg/L	872	931	661	232	1010
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	562	961	234	627	547
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	7690	9010	2360	6820	7640
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	295	239	104	41	284
Magnesium	7439-95-4	1	mg/L	622	1190	172	460	634
Sodium	7440-23-5	1	mg/L	3780	3440	1170	3560	3730
Potassium	7440-09-7	1	mg/L	17	42	11	4	19
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	0.030	0.004	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.004	<0.001	<0.001	<0.001	0.003
Nickel	7440-02-0	0.001	mg/L	0.002	0.003	0.008	0.006	0.003
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	0.012	0.010	0.038	0.018	0.006
Manganese	7439-96-5	0.001	mg/L	1.95	0.182	0.111	0.265	1.17
Iron	7439-89-6	0.05	mg/L	0.71	<0.05	<0.05	<0.05	0.16
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	16.5	1.40	1.02	10.7	13.0
Cobalt	7440-48-4	0.001	mg/L	0.019	0.004	0.005	0.041	0.025

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	MW01	BH207	BH209	QC19_180123_JF
			Sampling date / time	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301641-001	ES2301641-002	ES2301641-003	ES2301641-004	ES2301641-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	2.25	0.471	0.394	2.42	4.94
Iron	7439-89-6	0.05	mg/L	40.7	2.86	3.12	23.7	122
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<1.00	<0.01	<0.01	<0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<1.00	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.60	0.12	0.13	0.11	0.29
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.03	<0.01	<0.01	0.05
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.14	0.14	0.04	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.17	0.14	0.04	0.05
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.3	<0.5	<0.5	2.9	2.6
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	2.3	<0.5	<0.5	2.9	2.6
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	1.03	0.14	0.51	1.95	3.65
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	0.02	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	246	293	84.6	210	247
ø Total Cations	----	0.01	meq/L	231	260	70.5	195	229
ø Ionic Balance	----	0.01	%	3.20	5.82	9.11	3.76	3.78
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	4	9	3	1	2
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	MW01	BH207	BH209	QC19_180123_JF
			Sampling date / time	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301641-001	ES2301641-002	ES2301641-003	ES2301641-004	ES2301641-005
				Result	Result	Result	Result	Result
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup - Continued								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW02	MW01	BH207	BH209	QC19_180123_JF
			Sampling date / time	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00
Compound	CAS Number	LOR	Unit	ES2301641-001	ES2301641-002	ES2301641-003	ES2301641-004	ES2301641-005
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	116	112	105	109	109
Toluene-D8	2037-26-5	2	%	118	128	107	120	121
4-Bromofluorobenzene	460-00-4	2	%	113	120	102	116	106

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_180123_JF	TB_180123_JF	SBT-GW-4021	----	----
			Sampling date / time	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	----	----
Compound	CAS Number	LOR	Unit	ES2301641-006	ES2301641-007	ES2301641-008	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	----	----	7.55	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	21900	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	----	----	16600	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	1000	----	----
Total Alkalinity as CaCO3	----	1	mg/L	----	----	1000	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	544	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	----	7570	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	----	286	----	----
Magnesium	7439-95-4	1	mg/L	----	----	641	----	----
Sodium	7440-23-5	1	mg/L	----	----	3750	----	----
Potassium	7440-09-7	1	mg/L	----	----	19	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	----	<0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	----	----	0.003	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.003	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	----	----
Manganese	7439-96-5	0.001	mg/L	----	----	1.19	----	----
Iron	7439-89-6	0.05	mg/L	----	----	0.16	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	----	13.5	----	----
Cobalt	7440-48-4	0.001	mg/L	----	----	0.029	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_180123_JF	TB_180123_JF	SBT-GW-4021	----	----
			Sampling date / time	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	----	----
Compound	CAS Number	LOR	Unit	ES2301641-006	ES2301641-007	ES2301641-008	--------	--------
				Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	----	----	**4.64**	----	----
Iron	7439-89-6	0.05	mg/L	----	----	**102**	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	----	----	<0.01	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	----	----	<0.01	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	----	----	**0.25**	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	----	----	**0.04**	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	----	----	**0.02**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	**0.06**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	----	**3.8**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	----	**3.9**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	----	**4.15**	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	----	<0.01	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	----	**245**	----	----
ø Total Cations	----	0.01	meq/L	----	----	**231**	----	----
ø Ionic Balance	----	0.01	%	----	----	**2.99**	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	----	----	**3**	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	----	----	<50	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_180123_JF	TB_180123_JF	SBT-GW-4021	----	----
			Sampling date / time	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	----	----
Compound	CAS Number	LOR	Unit	ES2301641-006	ES2301641-007	ES2301641-008	--------	--------
				Result	Result	Result	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup - Continued								
C10 - C14 Fraction	----	50	µg/L	----	----	<50	----	----
C15 - C28 Fraction	----	100	µg/L	----	----	<100	----	----
C29 - C36 Fraction	----	50	µg/L	----	----	<50	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	----	----	<100	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	----	----	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	----	----	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	----	----	<100	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RB_180123_JF	TB_180123_JF	SBT-GW-4021	----	----
			Sampling date / time	18-Jan-2023 14:00	18-Jan-2023 14:00	18-Jan-2023 14:00	----	----
Compound	CAS Number	LOR	Unit	ES2301641-006	ES2301641-007	ES2301641-008	--------	--------
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	107	89.3	109	----	----
Toluene-D8	2037-26-5	2	%	109	88.4	107	----	----
4-Bromofluorobenzene	460-00-4	2	%	101	83.0	100	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	92.9	87.0	----	----	----
13C8-PFOA	----	0.02	%	120	100	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2301641**	Page	: 1 of 12
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 18-Jan-2023
Order number	: ----	Date Analysis Commenced	: 18-Jan-2023
C-O-C number	: ----	Issue Date	: 25-Jan-2023
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 8		
No. of samples analysed	: 8		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4822905)									
ES2301304-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.25	5.47	4.1	0% - 20%
ES2301304-012	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.17	5.59	7.8	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4822903)									
ES2301660-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	750	733	2.3	0% - 20%
ES2301304-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	14	13	11.8	0% - 50%
ES2301304-012	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	50	51	0.0	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4829862)									
ES2301603-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	712	720	1.0	0% - 20%
ES2301749-003	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	458	428	6.7	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4822904)									
ES2301304-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	<1	1	0.0	No Limit
ES2301304-012	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	2	58.4	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	4	2	58.4	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4824423)									
ES2301596-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	114	122	6.4	0% - 20%
ES2301672-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 4824421)									
ES2301584-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
ED045G: Chloride by Discrete Analyser (QC Lot: 4824421) - continued									
ES2301672-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	31	31	0.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4827195)									
ES2301519-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	13	13	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	2	2	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	414	416	0.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	388	395	1.7	0% - 20%
ES2301610-005	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	2	2	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	1	1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	292	295	1.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	9	9	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 4827198)									
EW2300216-007	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	2	2	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	8	11	24.6	0% - 50%
		ED093F: Potassium	7440-09-7	1	mg/L	<1	2	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4827194)									
ES2301339-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.011	0.011	0.0	0% - 50%
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.084	0.084	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2301610-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.025	0.025	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.010	0.010	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.021	0.020	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.27	0.27	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4830031)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4830031) - continued									
ES2301641-006	RB_180123_JF	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4828120)									
ES2301518-010	Anonymous	EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.42	0.44	3.6	0% - 20%
ES2301520-001	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.038	0.038	0.0	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.30	0.35	16.9	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.34	0.39	14.0	No Limit
ES2301518-010	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.221	0.222	0.0	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.43	0.50	15.1	0% - 50%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4827196)									
ES2301554-011	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2301641-008	SBT-GW-4021	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4830032)									
ES2301641-007	TB_180123_JF	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2301789-008	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4828892)									
--------		EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	----	<0.01	0.0	No Limit
ES2301451-007	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4829322)									
ES2301422-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.03	0.0	No Limit
ES2301641-001	MW02	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.60	0.58	3.0	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4824419)									
ES2301641-001	MW02	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2301596-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4829321)									
ES2301422-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.03	0.0	No Limit
ES2301641-001	MW02	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4829324)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4829324) - continued									
ES2301352-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	3.3	4.8	37.5	No Limit
ES2301422-008	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.0	0.7	33.3	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4829323)									
ES2301352-002	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	2.28	2.57	12.0	0% - 20%
ES2301422-008	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.10	0.16	49.7	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4824420)									
ES2301641-001	MW02	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2301672-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4823374)									
ES2301537-002	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	5	<1	129	No Limit
ES2301641-002	MW01	EP005: Total Organic Carbon	----	1	mg/L	9	<1	159	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4823911)									
ES2301533-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2301641-001	MW02	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4823911)									
ES2301533-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2301641-001	MW02	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4823911)									
ES2301533-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2301641-001	MW02	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4823429)									
EP2300271-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP2300271-010	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.19	0.18	0.0	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.13	0.12	0.0	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.02	0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4823429)									
EP2300271-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP2300271-010	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.03	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4823429)									
EP2300271-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP2300271-010	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4823641)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	98.7	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	82.1	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	76.5	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4823641)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	79.6	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	81.3	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	76.4	61.5	121
EA005P: pH by PC Titrator (QCLot: 4822905)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.7	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4822903)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	97.5	89.9	110
				<1	2100 µS/cm	98.8	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4829862)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	87.0	109
				<10	293 mg/L	114	75.2	126
				<10	2340 mg/L	107	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4822904)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	103	81.0	111
				----	50 mg/L	110	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4824423)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	101	82.0	122
				<1	500 mg/L	97.8	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4824421)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	100	80.9	127
				<1	1000 mg/L	101	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4827195)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	96.0	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	103	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	108	85.0	113
ED093F: Dissolved Major Cations (QCLot: 4827198)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	96.4	80.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
ED093F: Dissolved Major Cations (QCLot: 4827198) - continued								
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	103	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	103	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	109	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4827194)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	91.3	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	88.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.4	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	92.9	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	88.2	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.6	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	89.5	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.6	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	88.9	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	89.6	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.4	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830031)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	94.4	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	88.9	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	89.8	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	87.0	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	89.2	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.2	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.6	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	88.9	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	87.5	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	89.3	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	86.7	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4828120)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	93.0	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.0	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.1	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.6	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4827196)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.5	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4830032)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.6	83.0	105
EG050F: Dissolved Hexavalent Chromium (QCLot: 4828892)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	100	86.0	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4829322)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	104	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4824419)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	97.9	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4829321)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	98.5	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4829324)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	77.0	69.0	101
				<0.1	1 mg/L	70.2	70.0	118
				<0.1	5 mg/L	83.5	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4829323)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	82.1	71.3	126
				<0.01	0.442 mg/L	89.4	71.3	126
				<0.01	1 mg/L	96.8	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4824420)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	94.3	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4823374)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	87.2	72.0	120
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4823641)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4823641)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4823640)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	81.6	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	68.6	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	73.6	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4823911)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	87.6	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4823640)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	80.2	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	69.7	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	68.4	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4823911)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	92.8	75.0	127
EP080: BTEXN (QCLot: 4823911)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	90.4	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	110	70.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 4823911) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	110	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	109	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	115	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4823429)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	74.4	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	80.2	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	77.0	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4823429)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	100.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	81.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	84.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	76.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	83.8	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4823429)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	84.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	77.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	88.2	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	101	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4824423)							
ES2301596-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4824421)							
ES2301584-002	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	109	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4827194)							
ES2301339-003	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	112	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	107	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	111	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	108	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	112	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4827194) - continued							
ES2301339-003	Anonymous	EG020A-F: Lead	7439-92-1	1 mg/L	92.5	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	111	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	107	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	108	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830031)							
ES2301641-007	TB_180123_JF	EG020A-F: Arsenic	7440-38-2	1 mg/L	85.6	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	91.0	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	90.1	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	88.0	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	89.1	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	87.8	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	91.9	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	88.5	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	90.1	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4828120)							
ES2301518-005	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	110	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	113	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4827196)							
ES2301554-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	78.4	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4830032)							
ES2301641-006	RB_180123_JF	EG035F: Mercury	7439-97-6	0.01 mg/L	89.1	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4828892)							
--------		EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	94.6	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4829322)							
ES2301422-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	104	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4824419)							
ES2301641-001	MW02	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	95.7	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4829321)							
ES2301422-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	98.5	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4829324)							
ES2301352-006	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	78.1	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4829323)							
ES2301352-006	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	92.5	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4824420)							
ES2301641-001	MW02	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	97.2	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EP005: Total Organic Carbon (TOC) (QCLot: 4823374)							
ES2301537-003	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	71.4	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4823911)							
ES2301533-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	90.2	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4823911)							
ES2301533-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	90.4	70.0	130
EP080: BTEXN (QCLot: 4823911)							
ES2301533-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	92.7	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	88.6	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	90.4	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	86.6	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	87.1	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	80.1	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4823429)							
EP2300271-006	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	75.0	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	75.2	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	72.0	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4823429)							
EP2300271-006	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	96.4	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	73.2	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.8	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	74.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	83.2	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4823429)							
EP2300271-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	78.2	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	77.4	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	80.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	96.4	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2301641**	Page	: 1 of 12
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 18-Jan-2023
Site	: ----	Issue Date	: 25-Jan-2023
Sampler	: JACK FLANAGAN	No. of samples received	: 8
Order number	: ----	No. of samples analysed	: 8

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2301596--001	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Dissolved Metals by ICP-MS - Suite A	3	38	7.89	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	14	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
TRH - Semivolatile Fraction	0	14	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**----**	----	----	**18-Jan-2023**	18-Jan-2023	✓
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**----**	----	----	**18-Jan-2023**	15-Feb-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
MW02,	MW01,	**18-Jan-2023**	**----**	----	----	**23-Jan-2023**	25-Jan-2023	✓
BH207,	BH209,							
QC19_180123_JF,	SBT-GW-4021							
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
MW02,	MW01,	**18-Jan-2023**	**----**	----	----	**18-Jan-2023**	01-Feb-2023	✓
BH207,	BH209,							
QC19_180123_JF,	SBT-GW-4021							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
MW02,	MW01,	**18-Jan-2023**	**----**	----	----	**19-Jan-2023**	15-Feb-2023	✓
BH207,	BH209,							
QC19_180123_JF,	SBT-GW-4021							
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
MW02,	MW01,	**18-Jan-2023**	**----**	----	----	**19-Jan-2023**	15-Feb-2023	✓
BH207,	BH209,							
QC19_180123_JF,	SBT-GW-4021							
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
MW02,	MW01,	**18-Jan-2023**	**----**	----	----	**20-Jan-2023**	15-Feb-2023	✓
BH207,	BH209,							
QC19_180123_JF,	SBT-GW-4021							
EG020F: Dissolved Metals by ICP-MS								
Amber Glass Bottle - Unpreserved (EG020A-F)								
RB_180123_JF,	TB_180123_JF	**18-Jan-2023**	**----**	----	----	**23-Jan-2023**	17-Jul-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
MW02,	MW01,	**18-Jan-2023**	**----**	----	----	**20-Jan-2023**	17-Jul-2023	✓
BH207,	BH209,							
QC19_180123_JF,	SBT-GW-4021							
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
MW02,	MW01,	**18-Jan-2023**	**23-Jan-2023**	17-Jul-2023	✓	**23-Jan-2023**	17-Jul-2023	✓
BH207,	BH209,							
QC19_180123_JF,	SBT-GW-4021							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS								
Amber Glass Bottle - Unpreserved (EG035F)								
RB_180123_JF,	TB_180123_JF	**18-Jan-2023**	**----**	----	----	**25-Jan-2023**	01-Feb-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**----**	----	----	**24-Jan-2023**	15-Feb-2023	✓
EG050F: Dissolved Hexavalent Chromium								
Clear Plastic Bottle - NaOH Filtered (EG050G-F)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**----**	----	----	**23-Jan-2023**	15-Feb-2023	✓
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**----**	----	----	**23-Jan-2023**	15-Feb-2023	✓
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**----**	----	----	**19-Jan-2023**	20-Jan-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**----**	----	----	**23-Jan-2023**	15-Feb-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	15-Feb-2023	✓	**24-Jan-2023**	15-Feb-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	15-Feb-2023	✓	**24-Jan-2023**	15-Feb-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
MW02, BH207, QC19_180123_JF,	MW01, BH209, SBT-GW-4021	**18-Jan-2023**	**----**	----	----	**19-Jan-2023**	20-Jan-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP005: Total Organic Carbon (TOC)							
Amber VOC Vial - Sulfuric Acid (EP005) MW02, MW01, BH207, BH209, QC19_180123_JF, SBT-GW-4021	**18-Jan-2023**	**----**	----	----	**20-Jan-2023**	15-Feb-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) MW02, MW01, BH207, BH209, QC19_180123_JF, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	25-Jan-2023	✓	**25-Jan-2023**	04-Mar-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) MW02, MW01, BH207, BH209, QC19_180123_JF, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	25-Jan-2023	✓	**25-Jan-2023**	04-Mar-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) MW02, MW01, BH207, BH209, QC19_180123_JF, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	25-Jan-2023	✓	**25-Jan-2023**	04-Mar-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) MW02, MW01, BH207, BH209, QC19_180123_JF, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	25-Jan-2023	✓	**25-Jan-2023**	04-Mar-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) MW02, MW01, BH207, BH209, QC19_180123_JF, RB_180123_JF, TB_180123_JF, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	25-Jan-2023	✓	**25-Jan-2023**	04-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW02, BH207, BH209, QC19_180123_JF, RB_180123_JF, TB_180123_JF, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	01-Feb-2023	✓	**23-Jan-2023**	01-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW01	**18-Jan-2023**	**23-Jan-2023**	01-Feb-2023	✓	**24-Jan-2023**	01-Feb-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) MW02, MW01, BH207, BH209, QC19_180123_JF, RB_180123_JF, TB_180123_JF, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	25-Jan-2023	✓	**25-Jan-2023**	04-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW02, BH207, BH209, QC19_180123_JF, RB_180123_JF, TB_180123_JF, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	01-Feb-2023	✓	**23-Jan-2023**	01-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW01	**18-Jan-2023**	**23-Jan-2023**	01-Feb-2023	✓	**24-Jan-2023**	01-Feb-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) MW02, BH207, BH209, QC19_180123_JF, RB_180123_JF, TB_180123_JF, SBT-GW-4021	**18-Jan-2023**	**23-Jan-2023**	01-Feb-2023	✓	**23-Jan-2023**	01-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW01	**18-Jan-2023**	**23-Jan-2023**	01-Feb-2023	✓	**24-Jan-2023**	01-Feb-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) RB_180123_JF, TB_180123_JF	**18-Jan-2023**	**19-Jan-2023**	17-Jul-2023	✓	**24-Jan-2023**	17-Jul-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) RB_180123_JF, TB_180123_JF	**18-Jan-2023**	**19-Jan-2023**	17-Jul-2023	✓	**24-Jan-2023**	17-Jul-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) RB_180123_JF, TB_180123_JF	**18-Jan-2023**	**19-Jan-2023**	17-Jul-2023	✓	**24-Jan-2023**	17-Jul-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) RB_180123_JF, TB_180123_JF	**18-Jan-2023**	**19-Jan-2023**	17-Jul-2023	✓	**24-Jan-2023**	17-Jul-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	20	**15.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	28	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	38	**7.89**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	3	23	**13.04**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	17	**17.65**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	14	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	6	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	20	**15.00**	**8.33**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	16	**18.75**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	18	**16.67**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	17	**17.65**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	20	**5.00**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	14	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Environmental Division Sydney
Work Order Reference
ES2301641
Telephone : + 61-2-8784 8555

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							
1	GW02	18/1	2:00	Water	Bottles	Std (5-day)	X													
2	GW01			Water	Bottles	Std (5-day)	X													
3	BH207			Water	Bottles	Std (5-day)	X													
4	BH209			Water	Bottles	Std (5-day)	X													
5	QC19_180123_JF			Water	Bottles	Std (5-day)	X													
—	QC20_180123_JF			Water	Bottles	Std (5-day)	X													Send to Eurofins
6	RB_180123_JF			Water	Bottles	Std (5-day)				X										
7	TB_180123_JF			Water	Bottles	Std (5-day)					X									
8	SBT-GW-4021			Water	Bottles	Std (5-day)	X													
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

RELINQUISHED BY		RECEIVED BY	
Name: JACK F	Date: 18/1	Name: Dom.	Date: 18/1
Coffey	Time: 2:00	Company: ALS	Time: 2:40 pm 10.9°C
Name:	Date: →	Name: Jack	Date: 18/01/23
Company:	Time:	Company: AU	Time: 1920

Sample Receipt Advice: (Lab Use Only)
- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No.

*Container Type & Preservation Codes: **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2301789**	Page	: 1 of 15
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 19-Jan-2023 11:50
Order number	: ----	Date Analysis Commenced	: 19-Jan-2023
C-O-C number	: ----	Issue Date	: 30-Jan-2023 21:12
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK061G/EK062G: LOR raised for TKN/TN on various samples due to sample matrix.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: LOR's have been raised due to matrix interference. (High Total Dissolved Solids)
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003_A	SBT-GW-3003-B	SBT-GW-3003_C	SBT-GW-3006_W received as SBT-GW-3006	SBT-GW-3022
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301789-001	ES2301789-002	ES2301789-003	ES2301789-004	ES2301789-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.21	7.53	7.59	7.31	7.55
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	28300	36700	28400	2410	27100
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	25400	36400	24400	1620	22800
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	324	926	793	310	1090
Total Alkalinity as CaCO3	----	1	mg/L	324	926	793	310	1090
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1190	1240	637	175	730
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	9830	12300	9490	657	9150
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	206	375	481	132	272
Magnesium	7439-95-4	1	mg/L	850	1190	685	2	808
Sodium	7440-23-5	1	mg/L	4820	6430	4730	393	4670
Potassium	7440-09-7	1	mg/L	5	33	70	44	45
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.20	<0.10	0.02	<0.10
Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.020	<0.010	<0.001	<0.010
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0020	<0.0010	<0.0001	<0.0010
Chromium	7440-47-3	0.001	mg/L	<0.010	<0.020	<0.010	0.012	<0.010
Copper	7440-50-8	0.001	mg/L	<0.010	<0.020	<0.010	0.001	<0.010
Cobalt	7440-48-4	0.001	mg/L	0.056	<0.020	<0.010	0.001	<0.010
Nickel	7440-02-0	0.001	mg/L	0.012	<0.020	<0.010	0.001	<0.010
Lead	7439-92-1	0.001	mg/L	<0.010	<0.020	<0.010	<0.001	<0.010
Zinc	7440-66-6	0.005	mg/L	<0.050	<0.100	<0.050	<0.005	<0.050
Manganese	7439-96-5	0.001	mg/L	7.97	3.30	0.259	0.101	0.230
Iron	7439-89-6	0.05	mg/L	3.52	0.59	0.83	0.42	2.39
EG020T: Total Metals by ICP-MS								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003_A	SBT-GW-3003-B	SBT-GW-3003_C	SBT-GW-3006_W received as SBT-GW-3006	SBT-GW-3022
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301789-001	ES2301789-002	ES2301789-003	ES2301789-004	ES2301789-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Aluminium	7429-90-5	0.01	mg/L	2.41	1.35	2.03	3.78	7.07
Cobalt	7440-48-4	0.001	mg/L	0.052	0.018	<0.010	0.004	<0.010
Manganese	7439-96-5	0.001	mg/L	7.25	3.71	0.353	0.244	0.410
Iron	7439-89-6	0.05	mg/L	8.61	16.0	4.98	4.72	17.8
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.02	<0.01	0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.41	0.14	4.81	0.69	2.42
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	2.40	1.29	<0.01	<0.01	0.02
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	2.40	1.30	<0.01	<0.01	0.02
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.6	14.6	5.4	<1.0	3.1
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	3.0	15.9	5.4	<1.0	3.1
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.12	5.08	0.28	0.30	0.18
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	308	391	297	28.4	295
ø Total Cations	----	0.01	meq/L	290	397	288	25.0	284
ø Ionic Balance	----	0.01	%	3.09	0.75	1.52	6.37	1.85
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	9	8	<1	8	11

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003_A	SBT-GW-3003-B	SBT-GW-3003_C	SBT-GW-3006_W received as SBT-GW-3006	SBT-GW-3022
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301789-001	ES2301789-002	ES2301789-003	ES2301789-004	ES2301789-005
				Result	Result	Result	Result	Result
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3003_A	SBT-GW-3003-B	SBT-GW-3003_C	SBT-GW-3006_W received as SBT-GW-3006	SBT-GW-3022
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301789-001	ES2301789-002	ES2301789-003	ES2301789-004	ES2301789-005
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	84.8	112	114	110	110
Toluene-D8	2037-26-5	2	%	94.8	123	123	121	121
4-Bromofluorobenzene	460-00-4	2	%	98.9	124	127	122	123

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012_A	SBT-GW-3012_B	SBT-GW-3012_C	SMGW-BH-C332	SMGW-BH-C324
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301789-006	ES2301789-007	ES2301789-008	ES2301789-009	ES2301789-010
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.13	7.44	7.46	7.46	7.87
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	4680	29400	29800	27400	21500
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	3170	27100	25000	25700	17400
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	326	1210	671	1040	1280
Total Alkalinity as CaCO3	----	1	mg/L	326	1210	671	1040	1280
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	373	1990	3	1550	636
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	1210	9550	10200	9030	7110
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	34	247	506	381	203
Magnesium	7439-95-4	1	mg/L	82	1170	573	985	668
Sodium	7440-23-5	1	mg/L	839	4840	5000	4400	3330
Potassium	7440-09-7	1	mg/L	13	50	78	31	41
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.74	<0.10	<0.10	<0.10	<0.01
Arsenic	7440-38-2	0.001	mg/L	0.001	<0.010	<0.010	<0.010	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0010	<0.0010	<0.0010	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.010	<0.010	<0.010	<0.001
Copper	7440-50-8	0.001	mg/L	0.008	<0.010	<0.010	<0.010	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.008	<0.010	<0.010	<0.010	0.006
Nickel	7440-02-0	0.001	mg/L	0.008	<0.010	<0.010	<0.010	0.006
Lead	7439-92-1	0.001	mg/L	<0.001	<0.010	<0.010	<0.010	<0.001
Zinc	7440-66-6	0.005	mg/L	0.023	<0.050	<0.050	<0.050	0.050
Manganese	7439-96-5	0.001	mg/L	0.739	0.057	0.044	0.020	1.44
Iron	7439-89-6	0.05	mg/L	0.62	<0.10	2.45	<0.10	0.14
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	108	3.36	3.75	0.61	0.16
Cobalt	7440-48-4	0.001	mg/L	0.156	<0.010	<0.010	<0.010	0.007

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012_A	SBT-GW-3012_B	SBT-GW-3012_C	SMGW-BH-C332	SMGW-BH-C324
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301789-006	ES2301789-007	ES2301789-008	ES2301789-009	ES2301789-010
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	2.76	0.325	0.178	0.063	1.88
Iron	7439-89-6	0.05	mg/L	197	11.0	10.4	1.59	1.83
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.19	0.09	8.00	0.06	0.20
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	<0.01	<0.01	0.04
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.69	<0.01	0.05	14.2	0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.70	<0.01	0.05	14.2	0.05
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	5.4	<0.5	9.4	<0.5	1.2
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	6.1	<0.5	9.4	14.2	1.2
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	4.52	0.20	0.46	0.12	0.44
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	0.07
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	48.4	335	301	308	239
ø Total Cations	----	0.01	meq/L	45.3	320	292	292	211
ø Ionic Balance	----	0.01	%	3.35	2.22	1.57	2.58	6.30
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	9	16	6	10	2
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	320	<50	<50	<50
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012_A	SBT-GW-3012_B	SBT-GW-3012_C	SMGW-BH-C332	SMGW-BH-C324
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301789-006	ES2301789-007	ES2301789-008	ES2301789-009	ES2301789-010
				Result	Result	Result	Result	Result
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup - Continued								
C10 - C14 Fraction	----	50	µg/L	<50	**90**	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	**230**	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	**330**	<100	<100	<100
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	**120**	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	**210**	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	**200**	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	**780**	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	**180**	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	**1160**	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	**280**	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	**820**	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	**1100**	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	**280**	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-3012_A	SBT-GW-3012_B	SBT-GW-3012_C	SMGW-BH-C332	SMGW-BH-C324
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301789-006	ES2301789-007	ES2301789-008	ES2301789-009	ES2301789-010
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**104**	**109**	**129**	**117**	**111**
Toluene-D8	2037-26-5	2	%	**115**	**120**	**121**	**129**	**121**
4-Bromofluorobenzene	460-00-4	2	%	**115**	**124**	**119**	**125**	**121**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-C330	RB_190123_JF	TB_190123_JF	----	----
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2301789-011	ES2301789-012	ES2301789-013	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.38	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	25800	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	23000	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	79	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	79	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1220	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	8600	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	34	----	----	----	----
Magnesium	7439-95-4	1	mg/L	708	----	----	----	----
Sodium	7440-23-5	1	mg/L	3800	----	----	----	----
Potassium	7440-09-7	1	mg/L	5	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	3.15	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	0.0006	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	0.024	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	0.490	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.314	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	0.002	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.986	<0.005	----	----	----
Manganese	7439-96-5	0.001	mg/L	1.99	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	3.20	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	0.483	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-C330	RB_190123_JF	TB_190123_JF	----	----
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2301789-011	ES2301789-012	ES2301789-013	--------	--------
				Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	**3.17**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**1.06**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	----	----	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.12**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.04**	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.90**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.94**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.9**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.11**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**270**	----	----	----	----
ø Total Cations	----	0.01	meq/L	**225**	----	----	----	----
ø Ionic Balance	----	0.01	%	**8.93**	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**15**	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-C330	RB_190123_JF	TB_190123_JF	----	----
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2301789-011	ES2301789-012	ES2301789-013	--------	--------
				Result	Result	Result	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup - Continued								
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-C330	RB_190123_JF	TB_190123_JF	----	----
			Sampling date / time	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2301789-011	ES2301789-012	ES2301789-013	--------	--------
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	----	<0.01	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	<0.01	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	<0.01	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	<0.01	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	118	106	101	----	----
Toluene-D8	2037-26-5	2	%	129	123	117	----	----
4-Bromofluorobenzene	460-00-4	2	%	128	124	115	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	----	97.1	----	----	----
13C8-PFOA	----	0.02	%	----	97.9	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2301789**	Page	: 1 of 14
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 19-Jan-2023
Order number	: ----	Date Analysis Commenced	: 19-Jan-2023
C-O-C number	: ----	Issue Date	: 30-Jan-2023
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4825339)									
ES2301789-001	SBT-GW-3003_A	EA005-P: pH Value	----	0.01	pH Unit	7.21	7.23	0.3	0% - 20%
ES2301789-010	SMGW-BH-C324	EA005-P: pH Value	----	0.01	pH Unit	7.87	7.84	0.4	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4825340)									
ES2301789-001	SBT-GW-3003_A	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	28300	28700	1.4	0% - 20%
ES2301789-010	SMGW-BH-C324	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	21500	21700	0.7	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4830940)									
ES2301712-010	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	<10	0.0	No Limit
ES2301789-002	SBT-GW-3003-B	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	36400	35900	1.5	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4825341)									
ES2301789-001	SBT-GW-3003_A	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	324	327	0.9	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	324	327	0.9	0% - 20%
ES2301789-010	SMGW-BH-C324	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1280	1290	0.7	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	1280	1290	0.7	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4826025)									
ES2301365-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1070	1080	1.0	0% - 20%
ES2301789-008	SBT-GW-3012_C	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	3	<1	99.2	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 4826024)									
ES2301240-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	41	41	0.0	0% - 20%
ES2301789-001	SBT-GW-3003_A	ED045G: Chloride	16887-00-6	1	mg/L	9830	9810	0.2	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED093F: Dissolved Major Cations (QC Lot: 4830033)									
ES2301789-001	SBT-GW-3003_A	ED093F: Calcium	7440-70-2	1	mg/L	206	219	6.2	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	850	914	7.2	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4820	5150	6.5	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.0	No Limit
ES2301789-003	SBT-GW-3003_C	ED093F: Calcium	7440-70-2	1	mg/L	481	476	1.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	685	678	1.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4730	4680	1.1	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	70	70	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4830031)									
ES2301641-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2301789-001	SBT-GW-3003_A	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.056	0.059	6.5	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	7.97	8.62	7.8	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.012	0.013	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.050	<0.050	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.10	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	3.52	3.78	7.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4830034)									
ES2301789-003	SBT-GW-3003_C	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.259	0.255	1.4	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.010	<0.010	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4830034) - continued									
ES2301789-003	SBT-GW-3003_C	EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.050	<0.050	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.10	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.83	0.82	0.0	No Limit
ES2301804-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.296	0.297	0.6	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.015	0.015	0.0	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.009	0.010	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.04	0.04	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4830691)									
ES2301753-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.015	0.015	0.0	0% - 50%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.459	0.459	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	3.83	3.91	2.2	0% - 20%
ES2301753-011	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4830740)									
ES2301774-010	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.014	0.021	38.6	0% - 50%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4830740) - continued									
ES2301774-010	Anonymous	EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.05	0.06	0.0	No Limit
ES2301789-008	SBT-GW-3012_C	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.178	0.184	3.4	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	3.75	3.84	2.5	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	10.4	10.7	2.4	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4830032)									
ES2301641-007	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2301789-008	SBT-GW-3012_C	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4830692)									
ES2301753-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2301753-012	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	0.0006	0.0006	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4836677)									
ES2301788-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2301789-008	SBT-GW-3012_C	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4832161)									
ES2301720-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.11	0.09	15.4	0% - 50%
ES2301735-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.18	0.19	0.0	0% - 50%
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4832162)									
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.69	0.68	2.4	0% - 20%
ES2301866-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.47	0.47	0.0	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4826023)									
ES2300709-009	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.0	No Limit
ES2301789-009	SMGW-BH-C332	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4832160)									
ES2301720-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2301735-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	21.4	21.7	1.4	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4832163)									
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2301866-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.22	0.22	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4832156)									
ES2301720-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.8	3.0	8.3	0% - 20%
ES2301735-004	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.3	0.5	32.6	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4832158)									
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4832158) - continued									
ES2301866-003	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.3	0.4	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4832157)									
ES2301720-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	4.92	5.18	5.0	0% - 20%
ES2301735-004	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.04	0.04	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4832159)									
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.30	0.26	12.5	No Limit
ES2301866-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.09	0.09	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4826026)									
ES2301789-010	SMGW-BH-C324	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.07	0.07	0.0	No Limit
ES2301789-001	SBT-GW-3003_A	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.04	117	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4828069)									
ES2301717-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	21	19	12.3	0% - 20%
EP005: Total Organic Carbon (TOC) (QC Lot: 4828070)									
ES2301789-009	SMGW-BH-C332	EP005: Total Organic Carbon	----	1	mg/L	10	8	21.8	0% - 50%
EW2300244-008	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	2	3	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4830296)									
ES2301464-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4830296)									
ES2301464-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4830296)									
ES2301464-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 4830296) - continued									
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4832989)									
ES2301794-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4832989)									
ES2301794-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.03	0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4832989)									
ES2301794-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4826111)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	79.7	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	82.8	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	86.6	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4826111)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	74.2	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	87.6	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	89.9	61.5	121
EA005P: pH by PC Titrator (QCLot: 4825339)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4825340)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	97.4	89.9	110
				<1	2100 µS/cm	91.0	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4830940)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	95.7	87.0	109
				<10	293 mg/L	104	75.2	126
				<10	2340 mg/L	103	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4825341)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	87.7	81.0	111
				----	50 mg/L	104	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4826025)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	102	82.0	122
				<1	500 mg/L	107	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4826024)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	107	80.9	127
				<1	1000 mg/L	104	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4830033)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	101	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	102	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	98.7	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	100	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830031)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	94.4	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830031) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	88.9	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	89.8	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	87.0	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	89.2	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.2	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.6	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	88.9	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	87.5	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	89.3	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	86.7	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830034)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	91.8	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	91.9	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	89.7	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	87.5	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	89.3	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	89.6	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	89.5	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	88.7	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.6	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	92.8	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	87.9	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830691)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	88.6	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	88.8	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.2	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	88.2	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	84.0	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	82.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	87.8	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	86.8	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.2	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	88.0	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	85.0	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4830740)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	101	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	99.1	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	85.0	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4830740) - continued								
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4830032)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.6	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4830692)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.1	83.0	105
EG050F: Dissolved Hexavalent Chromium (QCLot: 4836677)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	102	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4832161)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	105	90.0	114
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4832162)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	104	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4826023)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	100	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4832160)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	96.5	91.0	113
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4832163)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	96.8	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4832156)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	92.9	69.0	101
				<0.1	1 mg/L	92.6	70.0	118
				<0.1	5 mg/L	99.4	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4832158)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	93.4	69.0	101
				<0.1	1 mg/L	77.2	70.0	118
				<0.1	5 mg/L	81.2	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4832157)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	91.2	71.3	126
				<0.01	0.442 mg/L	92.7	71.3	126
				<0.01	1 mg/L	99.6	71.3	126
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4832159)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	89.9	71.3	126
				<0.01	0.442 mg/L	97.6	71.3	126
				<0.01	1 mg/L	92.5	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4826026)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	94.8	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4828069)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	97.1	72.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP005: Total Organic Carbon (TOC) (QCLot: 4828070)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	96.0	72.0	120
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4826111)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4826111)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4826112)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	67.0	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	81.2	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	84.3	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4830296)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	80.9	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4826112)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	72.8	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	86.1	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	87.7	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4830296)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	87.5	75.0	127
EP080: BTEXN (QCLot: 4830296)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.2	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	96.4	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	107	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	110	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	106	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	113	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4832989)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	77.2	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	78.4	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	77.4	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4832989)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	83.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	81.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	83.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	80.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	80.0	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4832989)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	86.8	63.0	143

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4832989) - continued								
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	80.8	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	87.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	85.0	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4826025)							
ES2301365-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4826024)							
ES2301240-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	130	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830031)							
ES2301641-007	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	85.6	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	91.0	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	90.1	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	88.0	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	89.1	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	87.8	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	91.9	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	88.5	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	90.1	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830034)							
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EG020A-F: Arsenic	7440-38-2	1 mg/L	94.2	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	90.7	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	87.4	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	91.4	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	92.6	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	86.4	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	87.7	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	90.1	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	92.4	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830691)							
ES2301753-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	82.2	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4830691) - continued							
ES2301753-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.25 mg/L	91.8	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	91.9	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	84.2	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	85.4	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	92.0	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	92.0	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	92.4	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	96.0	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4830740)							
ES2301781-001	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	103	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	108	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4830032)							
ES2301641-006	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	89.1	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4830692)							
ES2301753-003	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	102	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4836677)							
ES2301788-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	101	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4832161)							
ES2301720-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	93.0	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4832162)							
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EK055G: Ammonia as N	7664-41-7	1 mg/L	89.5	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4826023)							
ES2300709-009	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	105	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4832160)							
ES2301720-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	107	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4832163)							
ES2301789-004	SBT-GW-3006_W received as SBT-GW-3006	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	94.7	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4832156)							
ES2301720-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	86.6	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4832158)							
ES2301789-005	SBT-GW-3022	EK061G: Total Kjeldahl Nitrogen as N	----	50 mg/L	95.1	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4832157)							
ES2301720-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	# Not Determined	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4832159)							
ES2301789-005	SBT-GW-3022	EK067G: Total Phosphorus as P	----	5 mg/L	95.5	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4826026)							
ES2301789-001	SBT-GW-3003_A	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	109	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4828069)							
ES2301717-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	96.9	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4828070)							
ES2301789-010	SMGW-BH-C324	EP005: Total Organic Carbon	----	100 mg/L	113	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4830296)							
ES2301464-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	112	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4830296)							
ES2301464-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	110	70.0	130
EP080: BTEXN (QCLot: 4830296)							
ES2301464-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	102	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	99.2	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	104	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	106	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	102	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	86.8	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2301789**	Page	: 1 of 14
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 19-Jan-2023
Site	: ----	Issue Date	: 30-Jan-2023
Sampler	: JACK FLANAGAN	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 13

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2301365--001	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK067G: Total Phosphorus as P by Discrete Analyser	ES2301720--002	Anonymous	**Total Phosphorus as P**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
SBT-GW-3003_A,	SBT-GW-3003-B,	----	----	----	23-Jan-2023	19-Jan-2023	**4**
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,						
SBT-GW-3022,	SBT-GW-3012_A,						
SBT-GW-3012_B,	SBT-GW-3012_C,						
SMGW-BH-C332,	SMGW-BH-C324,						
SMGW-BH-C330							

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	3	34	8.82	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	15	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	12	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**----**	----	----	**23-Jan-2023**	19-Jan-2023	×
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**----**	----	----	**23-Jan-2023**	16-Feb-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**----**	----	----	**24-Jan-2023**	26-Jan-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**----**	----	----	**23-Jan-2023**	02-Feb-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**----**	----	----	**20-Jan-2023**	16-Feb-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**----**	----	----	**20-Jan-2023**	16-Feb-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**----**	----	----	**23-Jan-2023**	16-Feb-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
EG020F: Dissolved Metals by ICP-MS								
Amber Glass Bottle - Unpreserved (EG020A-F)								
RB_190123_JF		**19-Jan-2023**	**----**	----	----	**24-Jan-2023**	18-Jul-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**----**	----	----	**23-Jan-2023**	18-Jul-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**24-Jan-2023**	18-Jul-2023	✓	**24-Jan-2023**	18-Jul-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS							
Amber Glass Bottle - Unpreserved (EG035F)							
RB_190123_JF	**19-Jan-2023**	**----**	----	----	**25-Jan-2023**	02-Feb-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**----**	----	----	**25-Jan-2023**	16-Feb-2023	✓
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050G-F)							
SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**----**	----	----	**27-Jan-2023**	16-Feb-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**----**	----	----	**25-Jan-2023**	16-Feb-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**----**	----	----	**20-Jan-2023**	21-Jan-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**----**	----	----	**25-Jan-2023**	16-Feb-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**24-Jan-2023**	16-Feb-2023	✓	**25-Jan-2023**	16-Feb-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**24-Jan-2023**	16-Feb-2023	✓	**25-Jan-2023**	16-Feb-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**----**	----	----	**20-Jan-2023**	21-Jan-2023	✓
EP005: Total Organic Carbon (TOC)							
Amber VOC Vial - Sulfuric Acid (EP005) SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**----**	----	----	**21-Jan-2023**	16-Feb-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071-SVSG) SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330	**19-Jan-2023**	**24-Jan-2023**	26-Jan-2023	✓	**30-Jan-2023**	05-Mar-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**24-Jan-2023**	26-Jan-2023	✓	**30-Jan-2023**	05-Mar-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**24-Jan-2023**	26-Jan-2023	✓	**30-Jan-2023**	05-Mar-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**24-Jan-2023**	26-Jan-2023	✓	**30-Jan-2023**	05-Mar-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330								
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**24-Jan-2023**	26-Jan-2023	✓	**30-Jan-2023**	05-Mar-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330,	RB_190123_JF							
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-3003_A,	SBT-GW-3003-B,	**19-Jan-2023**	**25-Jan-2023**	02-Feb-2023	✓	**25-Jan-2023**	02-Feb-2023	✓
SBT-GW-3003_C,	SBT-GW-3006_W - received as SBT-GW-3006,							
SBT-GW-3022,	SBT-GW-3012_A,							
SBT-GW-3012_B,	SBT-GW-3012_C,							
SMGW-BH-C332,	SMGW-BH-C324,							
SMGW-BH-C330,	RB_190123_JF,							
TB_190123_JF								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330, RB_190123_JF	**19-Jan-2023**	**24-Jan-2023**	26-Jan-2023	✓	**30-Jan-2023**	05-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330, RB_190123_JF, TB_190123_JF	**19-Jan-2023**	**25-Jan-2023**	02-Feb-2023	✓	**25-Jan-2023**	02-Feb-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-3003_A, SBT-GW-3003-B, SBT-GW-3003_C, SBT-GW-3006_W - received as SBT-GW-3006, SBT-GW-3022, SBT-GW-3012_A, SBT-GW-3012_B, SBT-GW-3012_C, SMGW-BH-C332, SMGW-BH-C324, SMGW-BH-C330, RB_190123_JF, TB_190123_JF	**19-Jan-2023**	**25-Jan-2023**	02-Feb-2023	✓	**25-Jan-2023**	02-Feb-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) RB_190123_JF	**19-Jan-2023**	**27-Jan-2023**	18-Jul-2023	✓	**30-Jan-2023**	18-Jul-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) RB_190123_JF	**19-Jan-2023**	**27-Jan-2023**	18-Jul-2023	✓	**30-Jan-2023**	18-Jul-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) RB_190123_JF	**19-Jan-2023**	**27-Jan-2023**	18-Jul-2023	✓	**30-Jan-2023**	18-Jul-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) RB_190123_JF	**19-Jan-2023**	**27-Jan-2023**	18-Jul-2023	✓	**30-Jan-2023**	18-Jul-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	6	59	10.17	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	6.67	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	3	34	8.82	10.00	×	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	12	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	11	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	13	15.38	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	59	5.08	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	6	40	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	6	40	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	13	**7.69**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	59	**5.08**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	59	**5.08**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Nitrite as N by Discrete Analyser	EK057G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	12	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	SBT-GW-3003_A	19/1	2:00	Water	Bottles	Std (5-day)	X							
2	SBT-GW-3003-B			Water	Bottles	Std (5-day)	X							
3	SBT-GW-3003-C			Water	Bottles	Std (5-day)	X							
4	SBT-GW-3006-W			Water	Bottles	Std (5-day)	X							
5	SBT-GW-3022			Water	Bottles	Std (5-day)	X							
6	SBT-GW-3012_A			Water	Bottles	Std (5-day)	X							
7	SBT-GW-3012_B			Water	Bottles	Std (5-day)	X							
8	SBT-GW-3012_C			Water	Bottles	Std (5-day)	X							
9	SMGW-BH-C332			Water	Bottles	Std (5-day)	X							
10	SMGW-BH-C324			Water	Bottles	Std (5-day)	X							
11	SMGW-BH-C330			Water	Bottles	Std (5-day)	X							
12	RB_190123_JF			Water	Bottles	Std (5-day)				X				
13	TB_19023_JF			Water	Bottles	Std (5-day)						X		
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

Environmental Division Sydney
Work Order Reference
ES2301789
Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jack.C	Date: 19/1/23	Name: Dom	Date: 19/1/23
Coffey	Time: 2:00	Company: ALS	Time: 11:50am 8°C
Name:	Date: →	Name: Jack	Date: 19/01/23
Company:	Time:	Company: AL	Time: 1910

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2301996**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 20-Jan-2023 13:15
Order number	: ----	Date Analysis Commenced	: 20-Jan-2023
C-O-C number	: ----	Issue Date	: 31-Jan-2023 18:14
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG035: Poor matrix recovery has been found for Mercury on sample ES2301899 #7, confirmed by re-analysis.
- EP231X: Positive result for analyte 6:2 Fluorotelomer sulfonic acid (6:2 FTS) on sample ES2301996_002 has been confirmed by Direct injection.
- TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EN055: Ionic Balance out of acceptable limits for sample 1 due to analytes not quantified in this report.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.21	7.57	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	159	1380	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	150	876	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	52	306	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	52	306	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	9	143	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	24	215	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	22	172	----	----	----
Magnesium	7439-95-4	1	mg/L	4	7	----	----	----
Sodium	7440-23-5	1	mg/L	20	112	----	----	----
Potassium	7440-09-7	1	mg/L	7	9	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.04	<0.01	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	<0.001	0.005	----	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.002	----	----	----
Copper	7440-50-8	0.001	mg/L	0.002	0.023	----	<0.001	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	<0.001	----
Manganese	7439-96-5	0.001	mg/L	0.002	0.031	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	0.004	----	<0.001	----
Zinc	7440-66-6	0.005	mg/L	0.009	0.022	----	<0.005	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.14	0.58	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.007	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	**0.004**	**0.084**	----	----	----
Iron	7439-89-6	0.05	mg/L	**0.19**	**1.53**	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	----
EG049F: Dissolved Trivalent Chromium								
Trivalent Chromium	16065-83-1	0.01	mg/L	<0.01	<0.01	----	----	----
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.08**	**0.02**	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.02**	**0.03**	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.53**	**0.30**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.55**	**0.33**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.5**	**0.8**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.0**	**1.1**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.04**	**0.08**	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**1.90**	**15.2**	----	----	----
ø Total Cations	----	0.01	meq/L	**2.48**	**14.3**	----	----	----
ø Ionic Balance	----	0.01	%	**----**	**3.04**	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**10**	**13**	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
Styrene	100-42-5	5	µg/L	<5	<5	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	**50**	<50	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued								
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	----	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	----	----	----
Fluorene	86-73-7	2	µg/L	<2	<2	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	----	----	----
Anthracene	120-12-7	2	µg/L	<2	<2	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	----	----	----
Pyrene	129-00-0	2	µg/L	<2	<2	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	----	----	----
Chrysene	218-01-9	2	µg/L	<2	<2	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	<2	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	**10**	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	----	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	<2	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	----	----	----
Isophorone	78-59-1	2	µg/L	<2	<2	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP075E: Nitroaromatics and Ketones - Continued								
Azobenzene	103-33-3	2	µg/L	<2	<2	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	<2	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	<2	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	----	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	----	----	----
Carbazole	86-74-8	2	µg/L	<2	<2	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	----	----	----
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	2	µg/L	<2	<2	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	<2	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	<2	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	<2	----	----	----
Aldrin	309-00-2	2	µg/L	<2	<2	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	<2	----	----	----
Endrin	72-20-8	2	µg/L	<2	<2	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	<2	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	<2	----	----	----
Diazinon	333-41-5	2	µg/L	<2	<2	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	----	----	----
Malathion	121-75-5	2	µg/L	<2	<2	----	----	----
Fenthion	55-38-9	2	µg/L	<2	<2	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	----	----	----
Ethion	563-12-2	2	µg/L	<2	<2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	<50	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	<100	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	<50	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	<100	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	<100	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	----	<0.01	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	----	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	**0.76**	----	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	<0.05	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	----	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	**0.76**	----	<0.01	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**66.0**	**64.8**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**67.4**	**69.3**	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**108**	**106**	----	----	----
Toluene-D8	2037-26-5	5	%	**108**	**106**	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	**106**	**104**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**24.6**	**26.5**	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**47.0**	**49.2**	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**61.5**	**60.1**	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	**46.8**	**46.6**	----	----	----
Anthracene-d10	1719-06-8	1.0	%	**66.4**	**68.8**	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	**69.4**	**70.9**	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	**37.3**	**40.7**	----	----	----
Phenol-d6	13127-88-3	2	%	**23.6**	**25.2**	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	**49.8**	**53.3**	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	**53.9**	**53.1**	----	----	----
EP075T: Base/Neutral Extractable Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	SMGW-BH-A122	TB_200123_JF	RB_200123_JF	----
			Sampling date / time	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	20-Jan-2023 09:15	----
Compound	CAS Number	LOR	Unit	ES2301996-001	ES2301996-002	ES2301996-003	ES2301996-004	--------
				Result	Result	Result	Result	----
EP075T: Base/Neutral Extractable Surrogates - Continued								
Nitrobenzene-D5	4165-60-0	2	%	48.6	54.5	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	34.8	34.9	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	45.0	45.2	----	----	----
Anthracene-d10	1719-06-8	2	%	64.6	68.0	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	69.2	68.0	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	110	109	106	108	----
Toluene-D8	2037-26-5	2	%	111	109	104	106	----
4-Bromofluorobenzene	460-00-4	2	%	111	108	106	106	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	103	95.9	----	94.8	----
13C8-PFOA	----	0.02	%	97.5	99.8	----	103	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2301996**	Page	: 1 of 22
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 20-Jan-2023
Order number	: ----	Date Analysis Commenced	: 20-Jan-2023
C-O-C number	: ----	Issue Date	: 31-Jan-2023
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4827877)									
ES2302085-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.39	7.46	0.9	0% - 20%
ES2302066-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.70	6.64	0.9	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4827878)									
ES2302085-020	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	195	194	0.6	0% - 20%
ES2302088-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	117	116	0.0	0% - 20%
ES2302085-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	190	190	0.0	0% - 20%
ES2302085-015	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	194	192	0.7	0% - 20%
ES2302066-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	922	913	1.1	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4830600)									
ES2301522-006	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	59	64	7.8	No Limit
ES2301993-005	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	46	39	15.4	No Limit
ED037P: Alkalinity by PC Titrator (QC Lot: 4827879)									
ES2302088-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	34	31	8.9	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	34	31	8.9	0% - 20%
ES2302066-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	207	209	0.6	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	207	209	0.6	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4828147)									
ES2301996-001	SBT-GW-0001	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	9	9	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 4828148)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED045G: Chloride by Discrete Analyser (QC Lot: 4828148) - continued									
ES2301996-001	SBT-GW-0001	ED045G: Chloride	16887-00-6	1	mg/L	24	24	0.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4831321)									
ES2301899-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	16	17	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	10	10	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	180	182	1.3	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.0	No Limit
ES2301823-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	3	3	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4831320)									
ES2301899-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.031	0.031	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2301823-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.12	0.12	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4833061)									
ES2302171-012	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4833061) - continued									
ES2302171-012	Anonymous	EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.011	0.011	0.0	0% - 50%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2300873-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0013	0.0011	15.3	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.245	0.252	2.7	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.042	0.044	3.8	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.060	0.060	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.012	0.013	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.398	0.400	0.4	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.182	0.186	2.1	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.10	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.10	<0.10	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4836300)									
ES2302000-007	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.101	0.102	0.0	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.04	0.05	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.40	0.39	0.0	No Limit
ES2301994-003	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<10 µg/L	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<50 µg/L	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4831322)									
ES2301824-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2301899-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4833064)									
ES2301996-004	RB_200123_JF	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
WN2300967-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 4839023)									
ES2300873-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2302456-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4837042)									
ES2302209-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	2.96	2.93	1.0	0% - 20%
ES2301996-001	SBT-GW-0001	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.08	0.10	16.6	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4828145)									
ES2302067-008	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4828145) - continued									
ES2301996-001	SBT-GW-0001	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4837043)									
ES2302088-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.03	0.0	No Limit
ES2301996-001	SBT-GW-0001	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.55	0.55	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4836965)									
ES2302082-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	108	105	3.5	0% - 50%
ES2301910-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	70.1	68.1	2.9	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4836964)									
ES2302089-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	1.06	1.04	2.4	0% - 50%
ES2301910-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	7.60	7.12	6.4	0% - 50%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4828146)									
ES2302067-008	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.06	0.06	0.0	No Limit
ES2301996-001	SBT-GW-0001	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4830637)									
ES2301996-001	SBT-GW-0001	EP005: Total Organic Carbon	----	1	mg/L	10	10	0.0	0% - 50%
ES2302236-010	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	<1	1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4832538)									
ES2301996-001	SBT-GW-0001	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2302360-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4832538) - continued									
ES2302360-001	Anonymous	EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4832538)									
ES2301996-001	SBT-GW-0001	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	50	60	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2302360-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4832538)									
ES2301996-001	SBT-GW-0001	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2302360-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4832538)									
ES2301996-001	SBT-GW-0001	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2302360-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4832538)									
ES2301996-001	SBT-GW-0001	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4832538) - continued									
ES2301996-001	SBT-GW-0001	EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2302360-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4832538) - continued									
ES2302360-001	Anonymous	EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4832538)									
ES2301996-001	SBT-GW-0001	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2302360-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4832538)									
ES2301996-001	SBT-GW-0001	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2302360-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4832537)									
ES2301996-001	SBT-GW-0001	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2302360-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4832537)									
ES2301996-001	SBT-GW-0001	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2302360-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4832537)									
ES2301996-001	SBT-GW-0001	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 4832537) - continued									
ES2301996-001	SBT-GW-0001	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2302360-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4836984)									
ES2301906-010	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.06	0.06	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	1.78	1.63	8.5	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4836984)									
ES2301906-010	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.06	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4836984)									
ES2301906-010	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.19	0.19	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	0.19	0.18	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup (QCLot: 4829196)								
EP071-SVSG: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	67.5	55.8	112
EP071-SVSG: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	78.9	71.6	113
EP071-SVSG: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	82.4	56.0	121
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4829196)								
EP071-SVSG: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	67.5	56.0	119
EP071-SVSG: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	71.5	62.5	110
EP071-SVSG: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	74.0	61.5	121
EA005P: pH by PC Titrator (QCLot: 4827877)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	101	98.8	101
				----	7 pH Unit	99.8	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4827878)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	98.3	89.9	110
				<1	2100 µS/cm	102	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4830600)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	91.4	87.0	109
				<10	293 mg/L	113	75.2	126
				<10	2340 mg/L	97.7	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4827879)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	98.8	81.0	111
				----	50 mg/L	116	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4828147)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	101	82.0	122
				<1	500 mg/L	107	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4828148)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	104	80.9	127
				<1	1000 mg/L	105	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4831321)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	101	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	98.0	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	100	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	99.7	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4831320)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	92.3	80.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4831320) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	88.1	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	89.5	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	90.1	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	88.7	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.0	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	88.0	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.3	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	90.0	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	90.7	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4833061)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.1	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	86.8	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	87.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	86.3	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	85.5	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	85.4	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	86.7	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	84.3	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	86.7	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	84.1	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	85.5	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4836300)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	90.7	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	89.4	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	90.3	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	89.9	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4831322)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	85.2	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4833064)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.2	83.0	105
EG050F: Dissolved Hexavalent Chromium (QCLot: 4839023)								
EG050G-F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.05 mg/L	104	86.0	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4837042)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	94.8	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4828145)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.4	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4837043)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4837043) - continued								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	103	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4836965)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	95.5	69.0	101
				<0.1	1 mg/L	106	70.0	118
				<0.1	5 mg/L	97.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4836964)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	89.0	71.3	126
				<0.01	0.442 mg/L	95.4	71.3	126
				<0.01	1 mg/L	108	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4828146)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	93.1	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4830637)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	95.6	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4829197)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	88.0	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	85.1	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	97.9	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	91.6	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	104	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	85.5	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	90.6	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	102	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	102	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	83.8	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	106	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	106	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	106	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	106	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	104	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	104	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	82.1	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	84.3	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	86.0	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	78.2	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	82.9	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4829197)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	76.9	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	78.2	63.7	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4829197) - continued								
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	26.5	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	88.4	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	98.4	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	98.1	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	89.3	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	84.5	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	88.0	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	91.4	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	84.0	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	92.8	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	96.1	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	107	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	81.8	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	107	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	108	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	88.4	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	70.8	51.6	128
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 4829196)								
EP071-SVSG: C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 4829196)								
EP071-SVSG: >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4832538)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	97.4	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	99.9	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	97.5	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	98.4	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	98.1	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	99.0	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	99.1	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	99.8	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	99.0	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	99.9	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	98.7	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	101	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	100	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	97.4	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4832538)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074B: Oxygenated Compounds (QCLot: 4832538) - continued								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	98.0	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	103	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	95.8	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	98.2	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4832538)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	98.8	72.8	127
EP074D: Fumigants (QCLot: 4832538)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	98.4	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	97.2	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	96.2	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	96.2	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	97.4	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4832538)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	97.7	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	101	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	103	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	91.9	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	98.9	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	101	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	96.1	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	74.0	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	98.6	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	97.4	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	97.7	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	97.0	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	100	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	96.2	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	97.4	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	99.6	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	97.8	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	98.4	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	97.3	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	97.8	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	95.6	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	95.4	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	97.7	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	96.4	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	104	74.0	126

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4832538) - continued								
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	94.5	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	101	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4832538)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	98.1	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	97.4	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	98.6	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	99.3	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	104	67.0	123
EP074G: Trihalomethanes (QCLot: 4832538)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	102	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	93.1	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	92.9	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	93.0	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4829193)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	74.9	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	69.0	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	65.2	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	66.4	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	79.8	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	75.8	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	82.7	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	84.4	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	87.3	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	88.8	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	91.0	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	84.7	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	78.5	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	79.4	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	80.2	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	78.4	59.1	118
EP075A: Phenolic Compounds (QCLot: 4829195)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	35.6	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	64.9	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	59.6	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	58.8	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	73.6	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	70.9	50.0	94.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP075A: Phenolic Compounds (QCLot: 4829195) - continued								
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	75.2	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	77.4	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	80.2	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	81.5	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	82.2	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	73.5	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4829195)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	66.2	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	69.5	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	73.9	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	80.0	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	78.0	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	79.8	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	84.6	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	87.5	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	84.7	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	85.5	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	99.0	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	86.2	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	87.9	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	80.4	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	# 124	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	84.2	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	92.7	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	102	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	102	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	100	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4829195)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	81.5	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	81.2	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	88.8	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	87.5	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	82.4	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	78.9	62.1	115
EP075D: Nitrosamines (QCLot: 4829195)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	57.2	46.0	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075D: Nitrosamines (QCLot: 4829195) - continued								
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	66.6	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	67.2	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	58.6	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	76.8	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	74.0	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	69.5	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	82.1	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	41.7	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4829195)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	53.8	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	73.1	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	69.6	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	75.1	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	83.9	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	83.5	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	# 103	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	90.8	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	86.4	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	81.4	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	76.2	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	96.6	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	76.4	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	81.9	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	81.7	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	89.6	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	87.1	57.7	110
EP075F: Haloethers (QCLot: 4829195)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	# 62.5	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	73.1	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	79.8	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	81.7	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4829195)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	56.5	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	56.7	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	59.6	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	60.5	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	59.5	46.0	96.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075G: Chlorinated Hydrocarbons (QCLot: 4829195) - continued								
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	62.7	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	66.7	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	51.2	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	74.0	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	81.2	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4829195)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	67.0	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	72.6	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	86.1	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	86.1	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	77.5	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	79.7	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	84.5	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	94.2	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4829195)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	81.2	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	80.5	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	80.8	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	85.7	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	87.9	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	88.4	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	86.8	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	84.4	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	92.4	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	84.7	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	97.6	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	86.7	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	87.2	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	110	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	88.0	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4829195)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	90.9	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	78.2	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	88.2	49.0	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075J: Organophosphorus Pesticides (QCLot: 4829195) - continued								
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	89.1	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	87.1	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	88.8	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	90.3	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	93.2	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	95.2	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	85.2	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	89.7	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4829194)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	71.7	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	74.0	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	90.5	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4832537)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	96.3	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4829194)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	68.8	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	82.1	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	83.9	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4832537)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	98.5	75.0	127
EP080: BTEXN (QCLot: 4832537)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	92.5	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	98.5	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	99.7	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	98.8	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.1	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	90.9	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4836984)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	91.0	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	94.2	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	87.2	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4836984)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	95.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	99.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	117	71.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4836984)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	96.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	101	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	109	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	104	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4828147)							
ES2301996-001	SBT-GW-0001	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	109	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4828148)							
ES2301996-001	SBT-GW-0001	ED045G: Chloride	16887-00-6	50 mg/L	110	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4831320)							
ES2301718-001	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	99.8	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	92.9	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	93.7	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	96.4	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	89.6	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	92.9	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	95.2	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	95.7	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4833061)							
ES2300873-002	Anonymous	EG020A-F: Arsenic	7440-38-2	10 mg/L	106	70.0	130
		EG020A-F: Cadmium	7440-43-9	2.5 mg/L	94.5	70.0	130
		EG020A-F: Chromium	7440-47-3	10 mg/L	86.3	70.0	130
		EG020A-F: Cobalt	7440-48-4	10 mg/L	94.3	70.0	130
		EG020A-F: Copper	7440-50-8	10 mg/L	96.0	70.0	130
		EG020A-F: Lead	7439-92-1	10 mg/L	91.3	70.0	130
		EG020A-F: Manganese	7439-96-5	10 mg/L	89.8	70.0	130
		EG020A-F: Nickel	7440-02-0	10 mg/L	94.3	70.0	130
		EG020A-F: Zinc	7440-66-6	10 mg/L	96.3	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4836300)							
ES2301994-001	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	90.8	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4836300) - continued							
ES2301994-001	Anonymous	EG020A-T: Manganese	7439-96-5	1 mg/L	93.3	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4831322)							
ES2301824-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	93.4	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4833064)							
ES2301899-007	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	# 38.6	70.0	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 4839023)							
ES2300873-001	Anonymous	EG050G-F: Hexavalent Chromium	18540-29-9	0.05 mg/L	78.0	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4837042)							
ES2301996-001	SBT-GW-0001	EK055G: Ammonia as N	7664-41-7	1 mg/L	101	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4828145)							
ES2301996-001	SBT-GW-0001	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	95.5	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4837043)							
ES2301996-001	SBT-GW-0001	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	108	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4836965)							
ES2301996-001	SBT-GW-0001	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	105	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4836964)							
ES2301996-001	SBT-GW-0001	EK067G: Total Phosphorus as P	----	1 mg/L	110	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4828146)							
ES2301996-001	SBT-GW-0001	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	83.4	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4830637)							
ES2301996-002	SMGW-BH-A122	EP005: Total Organic Carbon	----	100 mg/L	106	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4832538)							
ES2301996-001	SBT-GW-0001	EP074: Benzene	71-43-2	25 µg/L	99.2	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	103	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4832538)							
ES2301996-001	SBT-GW-0001	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	77.2	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	99.5	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4832538)							
ES2301996-001	SBT-GW-0001	EP074: Chlorobenzene	108-90-7	25 µg/L	106	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4832537)							
ES2301996-001	SBT-GW-0001	EP080: C6 - C9 Fraction	----	325 µg/L	127	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4832537)							
ES2301996-001	SBT-GW-0001	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	125	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 4832537)							
ES2301996-001	SBT-GW-0001	EP080: Benzene	71-43-2	25 µg/L	108	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	112	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	115	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	116	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	115	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	102	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2301996**	Page	: 1 of 13
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 20-Jan-2023
Site	: ----	Issue Date	: 31-Jan-2023
Sampler	: JACK FLANAGAN	No. of samples received	: 4
Order number	: ----	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075B: Polynuclear Aromatic Hydrocarbons	QC-4829195-002	----	**7.12-Dimethylbenz(a)anthracene**	57-97-6	124 %	50.0-108%	**Recovery greater than upper control limit**
EP075E: Nitroaromatics and Ketones	QC-4829195-002	----	**1-Naphthylamine**	134-32-7	103 %	46.8-102%	**Recovery greater than upper control limit**
EP075F: Haloethers	QC-4829195-002	----	**Bis(2-chloroethyl) ether**	111-44-4	62.5 %	69.1-112%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
EG035F: Dissolved Mercury by FIMS	ES2301899--007	Anonymous	**Mercury**	7439-97-6	38.6 %	70.0-130%	**Recovery less than lower data quality objective**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2301996-001	SBT-GW-0001	**Dibromo-DDE**	21655-73-2	66.0 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2301996-002	SMGW-BH-A122	**Dibromo-DDE**	21655-73-2	64.8 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	17	5.88	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)					
Conductivity by Auto Titrator	4	50	8.00	8.33	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	17	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**20-Jan-2023**	20-Jan-2023	✓
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**20-Jan-2023**	17-Feb-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**23-Jan-2023**	27-Jan-2023	✓
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**20-Jan-2023**	03-Feb-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**21-Jan-2023**	17-Feb-2023	✓
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**21-Jan-2023**	17-Feb-2023	✓
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**24-Jan-2023**	17-Feb-2023	✓
EG020F: Dissolved Metals by ICP-MS								
Amber Glass Bottle - Unpreserved (EG020A-F)								
RB_200123_JF		**20-Jan-2023**	**----**	----	----	**25-Jan-2023**	19-Jul-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**24-Jan-2023**	19-Jul-2023	✓
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**27-Jan-2023**	19-Jul-2023	✓	**27-Jan-2023**	19-Jul-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS								
Amber Glass Bottle - Unpreserved (EG035F)								
RB_200123_JF		**20-Jan-2023**	**----**	----	----	**30-Jan-2023**	03-Feb-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**25-Jan-2023**	17-Feb-2023	✓
EG050F: Dissolved Hexavalent Chromium								
Clear Plastic Bottle - NaOH Filtered (EG050G-F)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**28-Jan-2023**	17-Feb-2023	✓
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**27-Jan-2023**	17-Feb-2023	✓
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**21-Jan-2023**	22-Jan-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**27-Jan-2023**	17-Feb-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**27-Jan-2023**	17-Feb-2023	✓	**30-Jan-2023**	17-Feb-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**27-Jan-2023**	17-Feb-2023	✓	**30-Jan-2023**	17-Feb-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**21-Jan-2023**	22-Jan-2023	✓
EP005: Total Organic Carbon (TOC)								
Amber VOC Vial - Sulfuric Acid (EP005)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**----**	----	----	**25-Jan-2023**	17-Feb-2023	✓
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071-SVSG)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓
EP074B: Oxygenated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓
EP074C: Sulfonated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓
EP074G: Trihalomethanes								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**30-Jan-2023**	05-Mar-2023	✓
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-0001,	SMGW-BH-A122	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-0001, RB_200123_JF	SMGW-BH-A122,	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-0001, TB_200123_JF,	SMGW-BH-A122, RB_200123_JF	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-0001, RB_200123_JF	SMGW-BH-A122,	**20-Jan-2023**	**24-Jan-2023**	27-Jan-2023	✓	**31-Jan-2023**	05-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-0001, TB_200123_JF,	SMGW-BH-A122, RB_200123_JF	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-0001, TB_200123_JF,	SMGW-BH-A122, RB_200123_JF	**20-Jan-2023**	**30-Jan-2023**	03-Feb-2023	✓	**30-Jan-2023**	03-Feb-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-0001, RB_200123_JF	SMGW-BH-A122,	**20-Jan-2023**	**30-Jan-2023**	19-Jul-2023	✓	**31-Jan-2023**	19-Jul-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-0001, RB_200123_JF	SMGW-BH-A122,	**20-Jan-2023**	**30-Jan-2023**	19-Jul-2023	✓	**31-Jan-2023**	19-Jul-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-0001, RB_200123_JF	SMGW-BH-A122,	**20-Jan-2023**	**30-Jan-2023**	19-Jul-2023	✓	**31-Jan-2023**	19-Jul-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT-GW-0001, RB_200123_JF	SMGW-BH-A122,	**20-Jan-2023**	**30-Jan-2023**	19-Jul-2023	✓	**31-Jan-2023**	19-Jul-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	5	50	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	32	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	2	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	2	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	2	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	50	8.00	8.33	×	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	2	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	50	**2.00**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	17	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Trivalent Chromium - Dissolved	EG049G-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between total dissolved and dissolved hexavalent chromium.
Hexavalent Chromium by Discrete Analyser - Dissolved	EG050G-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fractions Only (after Silica Gel Cleanup)	EP071-SVSG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ 54/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	SBT-GW-0001	20/1/23	9:15	Water	Bottles	Std (5-day)		X						
2	SMGW-BH-A122	20/1/23	9:45	Water	Bottles	Std (5-day)		X						
3	TB_200123_JF	↓	9:45	Water	Bottles	Std (5-day)						X		
4	RB-200123_JF		9:45	Water	Bottles	Std (5-day)				X				
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
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				Water	Bottles	Std (5-day)								
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				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

Environmental Division Sydney
Work Order Reference
ES2301996
Telephone : +61-2-8784 8555

RELINQUISHED BY

Name: Katie Trevor — Date: 20/1/23
Coffey — Time:

Name: — Date: →
Company: — Time:

RECEIVED BY

Name: ALS - Dom — Date: 20/1/23
Company: — Time: 1:15pm — 8.6°C

Name: Jack — Date: 20/01/23
Company: ALS — Time: 1000

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	SBT - CM - 1030	1/2/23	2.00	Water	Bottles	Std (5-day)		X						
2	SBT - GW - 4008			Water	Bottles	Std (5-day)		X						
3	SBT - GW - 4010			Water	Bottles	Std (5-day)		X						
4	SMGW - BH - A401			Water	Bottles	Std (5-day)		X						
5	RB_010223_JF			Water	Bottles	Std (5-day)				X				
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

Environmental Division Sydney
Work Order Reference
ES2303275
Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: JF	Date: 1/2/23	Name: Jody	Date: 01/02/23
Coffey	Time: 2.00	Company: ALS	Time: 1850
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No.

*Container Type & Preservation Codes: **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: ~~Jack Flanagan~~ Katie Trevor — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	SBT-CM-1030	9/2/23	10:00	Water	Bottles	Std (5-day)		X						
2	SBT-GW-1031	↓	10:10	Water	Bottles	Std (5-day)		X						
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

Environmental Division Sydney
Work Order Reference
ES2304188
Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Katie Trevor	Date: 9/2/23	Name: Tom	Date: 9/2/23
Coffey	Time:	Company: AN	Time: 12pm
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

R.KH
16-2-2023
11:24 AM

Ramsen Khoshaba

From: Khaleda Ataei
Sent: Thursday, 16 February 2023 11:21 AM
To: rebatches.sydney; Samples Sydney
Subject: FW: [EXTERNAL] - RE: RESULTS & EDD & INVOICE for ALS Workorder : ES2304188 | Your Reference: SYDGE292575-4 WSA SBT

Hi Team,

Could you please organise a re-batch for Methane on both samples in ES2304188?

Thanks

Kind regards,

#1,2
VISSB

Khaleda Ataei
Project Manager, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8603
Khaleda.Ataei@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

Environmental Division
Sydney
Work Order Reference
ES2305063
Telephone : +61-2-8784 8555

From: Stephens, Emma <Emma.Stephens@tetratech.com>
Sent: Wednesday, 15 February 2023 6:21 PM
To: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Cc: O'Farrell, Casey <Casey.OFarrell@tetratech.com>
Subject: [EXTERNAL] - RE: RESULTS & EDD & INVOICE for ALS Workorder : ES2304188 | Your Reference: SYDGE292575-4 WSA SBT

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi Khaleda,

Could I please request methane analysis on these two samples?

Thanks,

Emma Stephens (she/ her) | Senior Environmental Scientist
Direct **+61 3 9290 7094** | Business **+61 3 9290 7000** | Mobile **+61 458 499 700** | emma.stephens@tetratech.com
I am available Monday, Tuesday, Wednesday and Thursday

This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

From: angel-no-reply@alsglobal.com <angel-no-reply@alsglobal.com>
Sent: Wednesday, 15 February 2023 5:48 PM
To: Stephens, Emma <Emma.Stephens@tetratech.com>
Subject: RESULTS & EDD & INVOICE for ALS Workorder : ES2304188 | Your Reference: SYDGE292575-4 WSA SBT

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Deliverables for ALS Workorder ES2304188

Project: SYDGE292575-4 WSA SBT

Dear EMMA STEPHENS,

Please find enclosed the following deliverables for **ES2304188**:

- SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Chemistry2e.CSV
- SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Header.XML
- SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Sample2e.CSV
- ES2304188_0_COA.pdf
- ES2304188_0_QC.pdf
- ES2304188_0_QCI.pdf
- 1151657926_INV.pdf
- ES2304188_COC.pdf

Report Recipients

- EMMA STEPHENS
  - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Chemistry2e.CSV
  - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Header.XML
  - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Sample2e.CSV
  - ES2304188_0_COA.pdf (Email)
  - ES2304188_0_QC.pdf (Email)
  - ES2304188_0_QCI.pdf (Email)
  - 1151657926_INV.pdf (Email)
  - ES2304188_COC.pdf (Email)
- JACK FLANAGAN
  - ES2304188_0_COA
  - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Chemistry2e
  - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Header
  - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Sample2e
  - ES2304188_0_QC
  - ES2304188_0_QCI
  - ES2304188_COC
- CASEY O'FARRELL

    - ES2304188_0_COA
    - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Chemistry2e
    - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Header
    - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Sample2e
    - ES2304188_0_QC
    - ES2304188_0_QCI
    - ES2304188_COC
- GENERAL ADMIN
    - 1151657926_INV
    - ES2304188_COC
- ESDAT REPORTS
    - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Chemistry2e
    - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Header
    - SYDGE292575-4 WSA SBT.ESDAT_ES2304188_0.Sample2e
    - ES2304188_COC

SAMPLE RECEIPT INFORMATION & BOTTLE TYPE

WORKORDER No: ES2305063

To be completed by Sample Receipt

Sorting Times *(Only record for BP, Mobil & URS)*

Time Sorting Commenced:

Time Placed in Fridge:

Sorting to Fridge Target Time <1 Hour

Temperature Details

Sample Temp: 4.1 °C

.....°C

.....°C

Chilling Method -

☐ Ice

☐ Ice Bricks

☐ No Chilling

Packaging

Security Seal Intact? ***Circle below***

☐ **YES** (Security seal intact)

☐ **NO** (Security seal broken)

☐ **NA** (No security seal used)

Packaging Type	No.
Hard Esky	
Foam Esky	

Other:

Courier Details (Mandatory for Quarantine)

Carrier: RE-BATCH

Con Note:

Samples checked, labelled and put in trays by: Initial:

Client Code:

Sample Receipt Advice Comments - To be completed by Sorting Staff

VOC analysis may be compromised as sample containers contained **headspace** *(list)*:

Details of any samples damaged during transit:

Other Information (e.g. Were bottles received that weren't completely filled) (e.g. If sample temperature is above 6'C add further detail here - Internal use only - Not for SRN):

Tray Numbers:

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2305832**	Page	: 1 of 10
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 22-Feb-2023 12:50
Order number	: ----	Date Analysis Commenced	: 22-Feb-2023
C-O-C number	: ----	Issue Date	: 01-Mar-2023 18:04
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 7		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EK057/EK059G:Nitrite and NOx results confirmed by re analysis sample #3
- TDS by method EA-015 sample 1,3-5 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	SMGW-BH-A122	SBT-GW-1016_s	SBT-GW-1016_m	SBT-GW-1016_d
			Sampling date / time	22-Feb-2023 09:00	22-Feb-2023 09:00	22-Feb-2023 09:00	22-Feb-2023 09:00	22-Feb-2023 09:00
Compound	CAS Number	LOR	Unit	ES2305832-001	ES2305832-002	ES2305832-003	ES2305832-004	ES2305832-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.59	7.46	7.21	5.47	5.88
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	25400	1440	2500	27200	31100
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	19400	920	1910	21500	27000
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1310	320	69	8	40
Total Alkalinity as CaCO3	----	1	mg/L	1310	320	69	8	40
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	828	147	100	1370	1550
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	9530	250	855	10700	12100
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	420	168	31	148	189
Magnesium	7439-95-4	1	mg/L	943	6	80	1100	1260
Sodium	7440-23-5	1	mg/L	4300	118	372	4940	5570
Potassium	7440-09-7	1	mg/L	52	9	7	3	3
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	0.45	<0.01
Arsenic	7440-38-2	0.001	mg/L	0.003	<0.001	<0.001	0.002	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	0.0001	0.0002
Chromium	7440-47-3	0.001	mg/L	0.002	0.007	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	0.023	0.003	0.002	0.004
Cobalt	7440-48-4	0.001	mg/L	0.004	0.005	0.014	0.314	0.326
Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.004	0.071	0.070
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	0.004	<0.001
Zinc	7440-66-6	0.005	mg/L	0.007	0.033	0.008	0.065	0.054
Manganese	7439-96-5	0.001	mg/L	0.537	0.060	0.117	1.36	1.57
Iron	7439-89-6	0.05	mg/L	0.88	<0.05	<0.05	1.65	2.39
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	39.4	0.51	43.1	3.46	77.0
Cobalt	7440-48-4	0.001	mg/L	0.187	0.006	0.115	0.329	0.334

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	SMGW-BH-A122	SBT-GW-1016_s	SBT-GW-1016_m	SBT-GW-1016_d
			Sampling date / time	22-Feb-2023 09:00	22-Feb-2023 09:00	22-Feb-2023 09:00	22-Feb-2023 09:00	22-Feb-2023 09:00
Compound	CAS Number	LOR	Unit	ES2305832-001	ES2305832-002	ES2305832-003	ES2305832-004	ES2305832-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	1.35	0.079	0.638	1.86	2.15
Iron	7439-89-6	0.05	mg/L	115	1.32	56.6	7.13	108
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	13.8	0.08	0.50	0.24	0.22
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.27	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.02	0.02	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.09	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	24.3	0.8	5.9	1.1	1.1
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	24.3	0.8	6.0	1.1	1.1
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	1.82	0.08	1.27	0.07	0.15
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	1.26	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	312	16.5	27.6	330	374
ø Total Cations	----	0.01	meq/L	287	14.2	24.5	313	355
ø Ionic Balance	----	0.01	%	4.22	7.37	5.93	2.74	2.59
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	6	16	8	5	3
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	60	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	1480	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	1060	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	2600	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B123	SMGW-BH-A122	SBT-GW-1016_s	SBT-GW-1016_m	SBT-GW-1016_d
			Sampling date / time	22-Feb-2023 09:00	22-Feb-2023 09:00	22-Feb-2023 09:00	22-Feb-2023 09:00	22-Feb-2023 09:00
Compound	CAS Number	LOR	Unit	ES2305832-001	ES2305832-002	ES2305832-003	ES2305832-004	ES2305832-005
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	**2270**	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	**690**	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	**2960**	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**112**	**114**	**123**	**124**	**133**
Toluene-D8	2037-26-5	2	%	**101**	**109**	**118**	**120**	**121**
4-Bromofluorobenzene	460-00-4	2	%	**106**	**98.0**	**107**	**106**	**110**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	RB_220223	----	----	----
			Sampling date / time	22-Feb-2023 09:00	22-Feb-2023 09:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2305832-006	ES2305832-007	--------	--------	--------
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.12**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**240**	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**158**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**71**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**71**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**12**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**26**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**20**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**4**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**20**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**6**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.003**	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.004**	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.006**	<0.005	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.013**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**0.64**	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.36**	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	RB_220223	----	----	----
			Sampling date / time	22-Feb-2023 09:00	22-Feb-2023 09:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2305832-006	ES2305832-007	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	**0.013**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**1.02**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.05**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.49**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.49**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.6**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.1**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.04**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**2.40**	----	----	----	----
ø Total Cations	----	0.01	meq/L	**2.35**	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**7**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	RB_220223	----	----	----
			Sampling date / time	22-Feb-2023 09:00	22-Feb-2023 09:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2305832-006	ES2305832-007	--------	--------	--------
				Result	Result	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	----	<0.01	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	<0.01	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	<0.01	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-0001	RB_220223	----	----	----
			Sampling date / time	22-Feb-2023 09:00	22-Feb-2023 09:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2305832-006	ES2305832-007	--------	--------	--------
				Result	Result	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	<0.01	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	122	86.7	----	----	----
Toluene-D8	2037-26-5	2	%	112	83.0	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	105	74.3	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	----	105	----	----	----
13C8-PFOA	----	0.02	%	----	103	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2305832**	Page	: 1 of 13
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 22-Feb-2023
Order number	: ----	Date Analysis Commenced	: 22-Feb-2023
C-O-C number	: ----	Issue Date	: 01-Mar-2023
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 7		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 50%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4888655)									
ES2305838-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.92	8.93	0.1	0% - 20%
ES2305832-004	SBT-GW-1016_m	EA005-P: pH Value	----	0.01	pH Unit	5.47	5.42	0.9	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4888650)									
ES2305652-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	179	179	0.0	0% - 20%
ES2305838-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	2200	2200	0.1	0% - 20%
ES2305482-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	131	129	1.6	0% - 20%
ES2305832-004	SBT-GW-1016_m	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	27200	27500	0.8	0% - 20%
EW2300879-006	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	131	130	0.9	0% - 20%
ES2305752-003	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	18700	18900	1.3	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4896031)									
ES2305753-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	374	420	11.6	0% - 20%
ES2305832-004	SBT-GW-1016_m	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	21500	21700	1.0	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4888654)									
ES2305832-004	SBT-GW-1016_m	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	8	6	26.4	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	8	6	26.4	No Limit
ES2305752-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4490	4420	1.7	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	4490	4420	1.7	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4889287)									
ES2305864-004	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<10	<10	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4889287) - continued									
ES2305832-001	SMGW-BH-B123	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	828	852	2.8	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4889288)									
ES2305864-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	8	8	0.0	No Limit
ES2305832-001	SMGW-BH-B123	ED045G: Chloride	16887-00-6	1	mg/L	9530	9540	0.1	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4889574)									
ES2305806-008	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	92	94	1.9	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	56	55	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	396	400	0.9	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	12	12	0.0	0% - 50%
ES2305862-005	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	4	4	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	1	1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	312	303	3.1	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4889573)									
ES2305806-008	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.003	0.002	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.009	0.009	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.04	0.03	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2305862-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.020	0.019	0.0	0% - 50%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.006	0.004	37.7	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.030	0.029	3.4	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.049	0.049	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4891988)									
ES2305742-013	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4891988) - continued									
ES2305742-013	Anonymous	EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2305995-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.223	0.225	0.8	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.017	0.017	0.0	0% - 50%
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.334	0.337	0.9	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.006	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.762	0.776	1.8	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.32	0.31	0.0	0% - 20%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.70	0.70	0.0	0% - 50%
EG020T: Total Metals by ICP-MS (QC Lot: 4889654)									
ES2305770-001	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	1.77	1.80	1.9	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.05	0.06	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	3.09	3.04	1.8	0% - 20%
ES2305536-001	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.454	0.465	2.2	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.18	0.19	0.0	0% - 50%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.24	0.24	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4889656)									
WN2302261-010	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.039	0.041	4.9	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.09	0.08	0.0	No Limit
WN2302261-001	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.608	0.588	3.3	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.30	1.25	4.2	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4889570)									
ES2305483-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EG035F: Dissolved Mercury by FIMS (QC Lot: 4889570) - continued									
ES2305806-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4889575)									
ES2305832-004	SBT-GW-1016_m	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4891989)									
ES2305742-035	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2305832-007	RB_220223	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4893149)									
ES2305828-007	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2305832-005	SBT-GW-1016_d	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.22	0.24	9.7	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4889285)									
ES2305924-007	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2305832-001	SMGW-BH-B123	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4893150)									
ES2305828-007	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2305832-005	SBT-GW-1016_d	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4893147)									
ES2305828-007	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.0	1.0	0.0	0% - 50%
ES2305832-006	SBT-GW-0001	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.6	0.6	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4893146)									
ES2305828-007	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.04	0.04	0.0	No Limit
ES2305832-006	SBT-GW-0001	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.04	0.04	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4889286)									
ES2305832-001	SMGW-BH-B123	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	1.26	1.27	0.0	0% - 20%
EP005: Total Organic Carbon (TOC) (QC Lot: 4889507)									
ES2305718-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	5	4	0.0	No Limit
EW2300879-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	3	3	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4891490)									
ES2305825-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2305832-002	SMGW-BH-A122	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4891490)									
ES2305825-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2305832-002	SMGW-BH-A122	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4891490)									
ES2305825-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 4891490) - continued									
ES2305825-001	Anonymous	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2305832-002	SMGW-BH-A122	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4896019)									
ES2305753-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2305753-003	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4896019)									
ES2305753-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2305753-003	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4896019)									
ES2305753-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2305753-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4896019) - continued									
ES2305753-003	Anonymous	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4888655)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.8	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4888650)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	90.6	89.9	110
				<1	2100 µS/cm	92.5	90.2	111
				<1	58301 µS/cm	100	93.3	106
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4896031)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	96.3	87.0	109
				<10	293 mg/L	103	75.2	126
				<10	2340 mg/L	87.8	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4888654)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	97.3	81.0	111
				----	50 mg/L	106	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4889287)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	111	82.0	122
				<1	500 mg/L	99.7	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4889288)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	102	80.9	127
				<1	1000 mg/L	103	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4889574)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	97.4	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	97.5	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	103	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	98.4	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4889573)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	92.6	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.9	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.6	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.7	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.7	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.2	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.2	82.0	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4889573) - continued								
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	105	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	97.2	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4891988)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	94.4	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.9	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.9	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.1	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.6	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.0	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.0	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.8	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.6	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4889654)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	104	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	104	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	105	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	104	85.0	117
EG020T: Total Metals by ICP-MS (QCLot: 4889656)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	106	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	103	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	110	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4889570)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.5	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4889575)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.1	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 4891989)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	100	83.0	105
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4893149)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	96.4	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4889285)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4893150)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	101	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4893147)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4893147) - continued								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	90.3	69.0	101
				<0.1	1 mg/L	106	70.0	118
				<0.1	5 mg/L	115	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4893146)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	90.4	71.3	126
				<0.01	0.442 mg/L	98.4	71.3	126
				<0.01	1 mg/L	104	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4889286)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	104	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4889507)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	96.6	72.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4888850)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	89.4	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	81.9	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	103	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4891490)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	117	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4888850)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	69.0	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	88.1	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	75.3	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4891490)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	117	75.0	127
EP080: BTEXN (QCLot: 4891490)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	115	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	112	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	107	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	108	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	112	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	107	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4896019)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	90.0	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	95.8	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	93.6	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4896019)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	90.8	73.0	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4896019) - continued								
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	107	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4896019)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	101	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	99.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	93.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	80.6	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4889287)							
ES2305832-001	SMGW-BH-B123	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4889288)							
ES2305832-001	SMGW-BH-B123	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4889573)							
ES2305806-007	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	127	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	130	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	130	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	130	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	130	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	126	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	130	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	129	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	130	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4891988)							
ES2305742-014	Anonymous	EG020A-F: Arsenic	7440-38-2	2 mg/L	98.3	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.5 mg/L	104	70.0	130
		EG020A-F: Chromium	7440-47-3	2 mg/L	99.8	70.0	130
		EG020A-F: Cobalt	7440-48-4	2 mg/L	95.7	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4891988) - continued							
ES2305742-014	Anonymous	EG020A-F: Copper	7440-50-8	2 mg/L	98.8	70.0	130
		EG020A-F: Lead	7439-92-1	2 mg/L	100	70.0	130
		EG020A-F: Manganese	7439-96-5	2 mg/L	101	70.0	130
		EG020A-F: Nickel	7440-02-0	2 mg/L	95.9	70.0	130
		EG020A-F: Zinc	7440-66-6	2 mg/L	100	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4889654)							
ES2305536-002	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	115	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	120	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4889656)							
WN2302261-001	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	94.3	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	97.1	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4889570)							
ES2305483-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	95.4	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4889575)							
ES2305832-003	SBT-GW-1016_s	EG035F: Mercury	7439-97-6	0.01 mg/L	74.0	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4891989)							
ES2305742-034	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	95.7	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4893149)							
ES2305828-007	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	104	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4889285)							
ES2305832-001	SMGW-BH-B123	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	95.6	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4893150)							
ES2305828-007	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	100	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4893147)							
ES2305828-018	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	112	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4893146)							
ES2305828-018	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	98.8	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4889286)							
ES2305832-001	SMGW-BH-B123	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	106	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4889507)							
ES2305718-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	102	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4891490)							
ES2305825-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	111	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4891490)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4891490) - continued							
ES2305825-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	109	70.0	130
EP080: BTEXN (QCLot: 4891490)							
ES2305825-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	103	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	100	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	100	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	100	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	102	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	105	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4896019)							
ES2305753-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	81.2	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	85.8	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	82.4	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4896019)							
ES2305753-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	93.6	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	89.2	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	94.8	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.8	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	93.2	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4896019)							
ES2305753-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	92.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	97.4	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	91.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	80.0	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2305832**	Page	: 1 of 11
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 22-Feb-2023
Site	: ----	Issue Date	: 01-Mar-2023
Sampler	: JACK FLANAGAN	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 7

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2305832--001	SMGW-BH-B123	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2305832--001	SMGW-BH-B123	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural						
SBT-GW-0001	----	----	----	23-Feb-2023	22-Feb-2023	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
TRH - Semivolatile Fraction	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
TRH - Semivolatile Fraction	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) SMGW-BH-B123, SMGW-BH-A122, SBT-GW-1016_s, SBT-GW-1016_m, SBT-GW-1016_d	**22-Feb-2023**	**----**	----	----	**22-Feb-2023**	22-Feb-2023	✓
Clear Plastic Bottle - Natural (EA005-P) SBT-GW-0001	**22-Feb-2023**	**----**	----	----	**23-Feb-2023**	22-Feb-2023	×
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P) SMGW-BH-B123, SMGW-BH-A122, SBT-GW-1016_s, SBT-GW-1016_m, SBT-GW-1016_d	**22-Feb-2023**	**----**	----	----	**22-Feb-2023**	22-Mar-2023	✓
Clear Plastic Bottle - Natural (EA010-P) SBT-GW-0001	**22-Feb-2023**	**----**	----	----	**23-Feb-2023**	22-Mar-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) SMGW-BH-B123, SMGW-BH-A122, SBT-GW-1016_s, SBT-GW-1016_m, SBT-GW-1016_d, SBT-GW-0001	**22-Feb-2023**	**----**	----	----	**27-Feb-2023**	01-Mar-2023	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) SMGW-BH-B123, SMGW-BH-A122, SBT-GW-1016_s, SBT-GW-1016_m, SBT-GW-1016_d	**22-Feb-2023**	**----**	----	----	**22-Feb-2023**	08-Mar-2023	✓
Clear Plastic Bottle - Natural (ED037-P) SBT-GW-0001	**22-Feb-2023**	**----**	----	----	**23-Feb-2023**	08-Mar-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) SMGW-BH-B123, SMGW-BH-A122, SBT-GW-1016_s, SBT-GW-1016_m, SBT-GW-1016_d, SBT-GW-0001	**22-Feb-2023**	**----**	----	----	**23-Feb-2023**	22-Mar-2023	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) SMGW-BH-B123, SMGW-BH-A122, SBT-GW-1016_s, SBT-GW-1016_m, SBT-GW-1016_d, SBT-GW-0001	**22-Feb-2023**	**----**	----	----	**23-Feb-2023**	22-Mar-2023	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) SMGW-BH-B123, SMGW-BH-A122, SBT-GW-1016_s, SBT-GW-1016_m, SBT-GW-1016_d, SBT-GW-0001	**22-Feb-2023**	**----**	----	----	**23-Feb-2023**	22-Mar-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**----**	----	----	**23-Feb-2023**	21-Aug-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001,							
RB_220223								
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**23-Feb-2023**	21-Aug-2023	✓	**23-Feb-2023**	21-Aug-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001							
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**----**	----	----	**27-Feb-2023**	22-Mar-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001,							
RB_220223								
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**----**	----	----	**27-Feb-2023**	22-Mar-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001							
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**----**	----	----	**23-Feb-2023**	24-Feb-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**----**	----	----	**27-Feb-2023**	22-Mar-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**24-Feb-2023**	22-Mar-2023	✓	**25-Feb-2023**	22-Mar-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001							
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**24-Feb-2023**	22-Mar-2023	✓	**25-Feb-2023**	22-Mar-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**----**	----	----	**23-Feb-2023**	24-Feb-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001							
EP005: Total Organic Carbon (TOC)								
Amber VOC Vial - Sulfuric Acid (EP005)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**----**	----	----	**24-Feb-2023**	22-Mar-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001							
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**27-Feb-2023**	01-Mar-2023	✓	**28-Feb-2023**	08-Apr-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001,							
RB_220223								
Amber VOC Vial - Sulfuric Acid (EP080)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**27-Feb-2023**	08-Mar-2023	✓	**27-Feb-2023**	08-Mar-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001,							
RB_220223								
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**27-Feb-2023**	01-Mar-2023	✓	**28-Feb-2023**	08-Apr-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001,							
RB_220223								
Amber VOC Vial - Sulfuric Acid (EP080)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**27-Feb-2023**	08-Mar-2023	✓	**27-Feb-2023**	08-Mar-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001,							
RB_220223								
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SMGW-BH-B123,	SMGW-BH-A122,	**22-Feb-2023**	**27-Feb-2023**	08-Mar-2023	✓	**27-Feb-2023**	08-Mar-2023	✓
SBT-GW-1016_s,	SBT-GW-1016_m,							
SBT-GW-1016_d,	SBT-GW-0001,							
RB_220223								
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
RB_220223		**22-Feb-2023**	**27-Feb-2023**	21-Aug-2023	✓	**28-Feb-2023**	21-Aug-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
RB_220223	**22-Feb-2023**	**27-Feb-2023**	21-Aug-2023	✓	**28-Feb-2023**	21-Aug-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
RB_220223	**22-Feb-2023**	**27-Feb-2023**	21-Aug-2023	✓	**28-Feb-2023**	21-Aug-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
RB_220223	**22-Feb-2023**	**27-Feb-2023**	21-Aug-2023	✓	**28-Feb-2023**	21-Aug-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	6	50	12.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	5	47	10.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	31	12.90	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	5	50	10.00	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	47	6.38	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	15.00	15.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	17	17.65	15.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	50	**2.00**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	47	**6.38**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	47	**6.38**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	**0.00**	**5.00**	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	SMGW-BH-B123	22/2/23	09:00	Water	Bottles	Std (5-day)	X							
2	SMGW-BH-A122	↓	↓	Water	Bottles	Std (5-day)	X							
3	SBT-GW-1016_s	↓	↓	Water	Bottles	Std (5-day)	X							
4	SBT-GW-1016_m	↓	↓	Water	Bottles	Std (5-day)	X							
5	SBT-GW-1016_d	↓	↓	Water	Bottles	Std (5-day)	X							
6	SBT-GW-0001	↓	↓	Water	Bottles	Std (5-day)	X							
7	RB_220223	↓	↓	Water	Bottles	Std (5-day)				X				
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

HT

Environmental Division Sydney
Work Order Reference
ES2305832
Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Katie Trevor	Date: 22/2/23	Name: Dom	Date: 22/2/23
Coffey	Time:	Company: ALS	Time: 12:50pm 8.9°C
Name:	Date: →	Name: Jack	Date: 22/02/23
Company:	Time:	Company: ALS	Time: 1515

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2306598**	Page	: 1 of 15
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 28-Feb-2023 14:15
Order number	: ----	Date Analysis Commenced	: 28-Feb-2023
C-O-C number	: ----	Issue Date	: 07-Mar-2023 17:45
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EK059G: LOR raised for NOx due to sample matrix
- TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.26	5.31	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1480	25800	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	1160	20000	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	72	6	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	72	6	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	43	2210	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	459	6910	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	40	34	----	----	----
Magnesium	7439-95-4	1	mg/L	34	942	----	----	----
Sodium	7440-23-5	1	mg/L	215	3800	----	----	----
Potassium	7440-09-7	1	mg/L	5	23	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.16	0.45	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0003	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	0.002	1.16	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	0.007	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	0.577	6.54	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.003	0.534	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	0.826	----	----	----
Iron	7439-89-6	0.05	mg/L	1.50	0.07	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	10.3	3.92	----	----	----
Cobalt	7440-48-4	0.001	mg/L	0.015	1.80	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.933	9.96	----	----	----
Iron	7439-89-6	0.05	mg/L	13.0	12.6	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.84	1.02	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.02	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.06	<0.10	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.08	<0.10	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	7.9	2.7	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	8.0	2.7	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	1.56	0.43	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.46	<0.01	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	15.3	241	----	----	----
ø Total Cations	----	0.01	meq/L	14.3	245	----	----	----
ø Ionic Balance	----	0.01	%	3.41	0.83	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	40	16	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
Styrene	100-42-5	5	µg/L	<5	<5	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
Chloromethane	74-87-3	50	µg/L	<50	<50	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP074G: Trihalomethanes - Continued								
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	----	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP075A: Phenolic Compounds - Continued								
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	----	----	----
Fluorene	86-73-7	2	µg/L	<2	<2	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	----	----	----
Anthracene	120-12-7	2	µg/L	<2	<2	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	----	----	----
Pyrene	129-00-0	2	µg/L	<2	<2	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	----	----	----
Chrysene	218-01-9	2	µg/L	<2	<2	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	<2	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP075D: Nitrosamines - Continued								
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	----	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	<2	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	----	----	----
Isophorone	78-59-1	2	µg/L	<2	<2	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	----	----	----
Azobenzene	103-33-3	2	µg/L	<2	<2	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	<2	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	<2	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP075G: Chlorinated Hydrocarbons - Continued								
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	----	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	----	----	----
Carbazole	86-74-8	2	µg/L	<2	<2	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	<2	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	<2	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	<2	----	----	----
Aldrin	309-00-2	2	µg/L	<2	<2	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	<2	----	----	----
Endrin	72-20-8	2	µg/L	<2	<2	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	<2	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP075I: Organochlorine Pesticides - Continued								
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	<2	----	----	----
Diazinon	333-41-5	2	µg/L	<2	<2	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	----	----	----
Malathion	121-75-5	2	µg/L	<2	<2	----	----	----
Fenthion	55-38-9	2	µg/L	<2	<2	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	----	----	----
Ethion	563-12-2	2	µg/L	<2	<2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	**30**	**30**	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	**20**	**30**	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	**20**	**30**	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP080: BTEXN - Continued								
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.02**	<0.01	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.02**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.02**	<0.01	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**93.3**	**89.2**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**74.0**	**78.8**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW-BH-B120	SMGW-BH-B319	----	----	----
			Sampling date / time	28-Feb-2023 14:00	28-Feb-2023 14:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2306598-001	ES2306598-002	--------	--------	--------
				Result	Result	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	99.8	105	----	----	----
Toluene-D8	2037-26-5	5	%	114	113	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	107	107	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	28.3	25.0	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	56.4	54.0	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	59.4	32.7	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	57.9	78.0	----	----	----
Anthracene-d10	1719-06-8	1.0	%	63.1	61.4	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	63.1	76.6	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	35.4	27.7	----	----	----
Phenol-d6	13127-88-3	2	%	24.1	17.5	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	48.2	43.1	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	42.2	16.9	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	58.4	63.0	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	50.3	53.6	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	56.5	61.7	----	----	----
Anthracene-d10	1719-06-8	2	%	61.8	56.4	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	58.5	69.8	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	102	107	----	----	----
Toluene-D8	2037-26-5	2	%	110	110	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	109	110	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	103	103	----	----	----
13C8-PFOA	----	0.02	%	98.6	97.4	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2306598**	Page	: 1 of 22
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 28-Feb-2023
Order number	: ----	Date Analysis Commenced	: 28-Feb-2023
C-O-C number	: ----	Issue Date	: 07-Mar-2023
Sampler	: JACK FLANAGAN		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4900985)									
ES2306662-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.86	7.88	0.3	0% - 20%
ES2306595-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.83	7.85	0.3	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4900987)									
ES2306662-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	746	749	0.4	0% - 20%
ES2306662-012	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	4180	4060	3.1	0% - 20%
EW2300968-003	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	77	78	1.3	0% - 20%
ES2306595-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1880	1890	0.3	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4906790)									
ES2306585-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1170	1160	0.9	0% - 20%
ES2306638-007	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	144	102	34.5	0% - 50%
ED037P: Alkalinity by PC Titrator (QC Lot: 4900986)									
EW2300968-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	1	<1	0.0	No Limit
ES2306595-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	597	601	0.6	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	597	601	0.6	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4901247)									
ES2305927-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	84	84	0.0	0% - 20%
ES2306535-008	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	12	12	0.0	0% - 50%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4901508)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4901508) - continued									
ES2306598-002	SMGW-BH-B319	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2210	2280	3.1	0% - 20%
EW2300964-008	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 4901246)									
ES2305927-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	158	155	1.8	0% - 20%
ES2306535-008	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	32	32	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4901509)									
ES2306598-002	SMGW-BH-B319	ED045G: Chloride	16887-00-6	1	mg/L	6910	6940	0.4	0% - 20%
EW2300964-008	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	<1	<1	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 4905550)									
ES2306636-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	40	39	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	14	14	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	38	38	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	2	2	0.0	No Limit
ES2306588-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	82	83	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	75	76	2.2	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	670	689	2.8	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4905548)									
ES2306489-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.050	<0.050	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.10	<0.10	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.10	<0.10	0.0	No Limit
ES2306588-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.017	0.018	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4905548) - continued									
ES2306588-001	Anonymous	EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4905523)									
ES2306546-003	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.187	0.190	1.6	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2306588-001	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.007	0.008	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.116	0.121	3.9	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	2.98	3.03	1.5	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	3.49	3.58	2.6	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4905549)									
ES2306489-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2306489-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4906816)									
ES2306580-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.91	0.92	0.0	0% - 20%
ES2306587-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.35	0.36	3.1	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4901250)									
ES2306556-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.10	<0.10	0.0	No Limit
ES2306580-008	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	<0.01	70.8	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4901505)									
ES2306263-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EW2300964-008	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4906817)									
ES2306580-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.10	<0.10	0.0	No Limit
ES2306587-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.50	0.49	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4906821)									
ES2306580-003	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.9	2.8	4.1	0% - 20%
ES2306587-003	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	6.7	6.4	5.4	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4906820)									
ES2306580-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.76	0.76	0.0	0% - 20%
ES2306587-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	12.3	12.2	0.9	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4901248)									
ES2305950-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4901510)									
ES2306598-002	SMGW-BH-B319	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EW2300964-008	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4906704)									
ES2306286-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	5	4	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP005: Total Organic Carbon (TOC) (QC Lot: 4906704) - continued									
ES2306598-002	SMGW-BH-B319	EP005: Total Organic Carbon	----	1	mg/L	16	15	6.7	0% - 50%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4903042)									
ES2306598-002	SMGW-BH-B319	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2306595-002	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4903042)									
ES2306598-002	SMGW-BH-B319	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2306595-002	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074B: Oxygenated Compounds (QC Lot: 4903042) - continued									
ES2306595-002	Anonymous	EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4903042)									
ES2306598-002	SMGW-BH-B319	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2306595-002	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4903042)									
ES2306598-002	SMGW-BH-B319	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2306595-002	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4903042)									
ES2306598-002	SMGW-BH-B319	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4903042) - continued									
ES2306598-002	SMGW-BH-B319	EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2306595-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4903042)									
ES2306598-002	SMGW-BH-B319	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2306595-002	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074F: Halogenated Aromatic Compounds (QC Lot: 4903042) - continued									
ES2306595-002	Anonymous	EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4903042)									
ES2306598-002	SMGW-BH-B319	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2306595-002	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4903041)									
ES2306595-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4903041)									
ES2306595-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4903041)									
ES2306595-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4904108)									
ES2306709-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.06	0.06	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.09	0.09	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2306709-002	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.11	0.11	0.0	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.18	0.18	0.0	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4904108)									
ES2306709-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2306709-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4904108) - continued									
ES2306709-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4904108)									
ES2306709-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2306709-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4900985)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.6	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4900987)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	98.0	89.9	110
				<1	2100 µS/cm	98.1	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4906790)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	98.9	87.0	109
				<10	293 mg/L	101	75.2	126
				<10	2340 mg/L	105	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4900986)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	101	81.0	111
				----	50 mg/L	107	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4901247)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	100	82.0	122
				<1	500 mg/L	96.3	82.0	122
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4901508)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	104	82.0	122
				<1	500 mg/L	96.0	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4901246)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	97.6	80.9	127
				<1	1000 mg/L	94.0	80.9	127
ED045G: Chloride by Discrete Analyser (QCLot: 4901509)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	98.2	80.9	127
				<1	1000 mg/L	98.5	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4905550)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	108	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	106	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	103	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4905548)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	100	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.1	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	101	85.0	111

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4905548) - continued								
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	93.8	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	103	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.7	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.9	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4905523)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	96.6	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	97.4	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.7	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	97.1	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4905549)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	104	83.0	105
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4906816)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	103	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4901250)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	100	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4901505)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	101	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4906817)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	99.3	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4906821)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	101	69.0	101
				<0.1	1 mg/L	103	70.0	118
				<0.1	5 mg/L	107	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4906820)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	90.1	71.3	126
				<0.01	0.442 mg/L	101	71.3	126
				<0.01	1 mg/L	104	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4901248)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	95.7	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4901510)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	93.4	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4906704)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	109	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4903592)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4903592) - continued								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	81.3	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	89.4	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	92.5	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	87.0	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	100	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	83.2	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	84.5	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	89.1	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	91.4	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	93.0	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	85.4	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	91.2	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.5	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	91.4	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	92.7	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	92.1	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	92.1	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	106	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	91.3	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	96.8	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	98.8	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4903592)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	89.0	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	106	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.9	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	96.9	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	95.5	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	93.1	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	97.2	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	95.6	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	92.6	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	98.0	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	92.4	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	91.2	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	96.0	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	88.0	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	102	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	89.8	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	92.8	74.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4903592) - continued								
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	102	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	97.2	51.6	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4903042)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	98.3	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	103	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	99.4	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	100	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	97.3	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	101	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	99.9	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	96.4	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	98.3	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	101	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	96.6	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	98.9	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	99.9	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	96.0	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4903042)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	91.5	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	91.6	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	94.5	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	95.2	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4903042)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	88.9	72.8	127
EP074D: Fumigants (QCLot: 4903042)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	96.6	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	101	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	95.5	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	96.5	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	102	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4903042)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	81.0	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	87.5	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	88.2	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	93.4	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	92.0	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	90.6	69.0	131

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4903042) - continued								
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	93.2	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	91.4	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	96.1	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	98.7	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	98.0	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	98.5	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	95.9	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	94.5	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	97.1	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	97.6	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	100	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	98.5	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	101	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	106	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	98.8	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	94.9	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	95.8	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	101	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	99.2	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	88.0	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	95.4	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4903042)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	101	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	98.6	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	100	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	98.8	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	96.1	67.0	123
EP074G: Trihalomethanes (QCLot: 4903042)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	103	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	95.6	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	92.5	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	92.4	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4903590)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	69.8	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	68.9	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	79.2	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	72.6	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	75.8	62.6	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4903590) - continued								
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	81.9	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	67.4	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	73.0	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	67.8	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	68.4	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	66.4	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	74.5	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	69.0	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	66.5	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	66.7	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	67.9	59.1	118
EP075A: Phenolic Compounds (QCLot: 4903589)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	41.3	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	66.0	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	72.1	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	69.9	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	78.8	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	82.8	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	80.2	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	76.6	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	83.8	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	83.3	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	82.4	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	69.4	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4903589)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	65.2	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	62.6	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	66.0	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	75.7	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	74.0	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	76.2	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	83.9	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	84.5	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	86.0	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	86.0	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	77.1	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	85.6	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	82.9	59.3	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4903589) - continued								
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	88.8	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	102	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	89.9	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	89.1	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	88.1	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	88.4	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	89.3	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4903589)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	81.7	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	77.7	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	90.9	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	89.8	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	105	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	92.0	62.1	115
EP075D: Nitrosamines (QCLot: 4903589)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	69.8	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	75.9	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	76.1	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	78.2	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	93.8	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	87.8	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	74.0	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	74.2	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	36.4	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4903589)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	51.9	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	83.5	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	76.5	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	92.9	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	77.8	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	71.2	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	73.2	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	69.9	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	71.9	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	79.8	66.0	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 4903589) - continued								
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	75.0	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	69.0	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	68.3	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	72.9	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	87.4	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	83.4	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	82.7	57.7	110
EP075F: Haloethers (QCLot: 4903589)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	# 68.2	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	84.8	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	70.6	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	70.9	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4903589)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	47.7	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	47.0	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	52.8	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	52.6	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	52.7	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	41.2	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	43.5	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	27.0	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	76.0	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	70.0	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4903589)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	70.5	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	77.5	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	77.0	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	66.7	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	71.0	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	65.0	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	84.5	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	74.8	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4903589)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	74.6	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	78.4	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	80.4	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	89.0	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	81.0	57.9	108

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075I: Organochlorine Pesticides (QCLot: 4903589) - continued								
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	81.0	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	77.7	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	86.4	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	85.0	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	83.1	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	83.1	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	86.6	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	83.7	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	82.8	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	85.1	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4903589)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	92.5	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	70.6	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	89.6	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	84.5	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	92.5	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	83.1	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	86.3	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	88.5	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	82.8	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	89.8	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	86.5	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4903041)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	100	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4903591)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	69.0	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	85.9	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	108	58.3	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4903041)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	102	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4903591)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	83.1	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	91.7	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	80.1	50.5	115

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 4903041)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	87.9	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	107	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	107	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	110	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	112	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	117	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4904108)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	90.1	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	93.6	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	104	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4904108)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	104	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	103	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4904108)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	103	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	105	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	112	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	102	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4901247)							
ES2305927-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4901508)							
ES2306598-002	SMGW-BH-B319	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4901246)							
ES2305927-002	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	100	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
ED045G: Chloride by Discrete Analyser (QCLot: 4901509)							
ES2306598-002	SMGW-BH-B319	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4905548)							
ES2306489-002	Anonymous	EG020A-F: Arsenic	7440-38-2	7.5 mg/L	91.7	70.0	130
		EG020A-F: Cadmium	7440-43-9	1.875 mg/L	85.3	70.0	130
		EG020A-F: Chromium	7440-47-3	7.5 mg/L	80.9	70.0	130
		EG020A-F: Cobalt	7440-48-4	7.5 mg/L	87.3	70.0	130
		EG020A-F: Copper	7440-50-8	7.5 mg/L	86.7	70.0	130
		EG020A-F: Lead	7439-92-1	7.5 mg/L	92.3	70.0	130
		EG020A-F: Manganese	7439-96-5	7.5 mg/L	81.1	70.0	130
		EG020A-F: Nickel	7440-02-0	7.5 mg/L	89.1	70.0	130
		EG020A-F: Zinc	7440-66-6	7.5 mg/L	84.3	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4905523)							
ES2306556-001	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	98.8	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	# Not Determined	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4905549)							
ES2306489-003	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	102	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4906816)							
ES2306580-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	111	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4901250)							
ES2306556-001	Anonymous	EK057G: Nitrite as N	14797-65-0	5 mg/L	99.1	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4901505)							
ES2306263-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	102	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4906817)							
ES2306580-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	5 mg/L	100	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4906821)							
ES2306580-004	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	109	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4906820)							
ES2306580-004	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	104	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4901248)							
ES2305950-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	89.7	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4901510)							
ES2306598-002	SMGW-BH-B319	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	86.8	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4906704)							

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EP005: Total Organic Carbon (TOC) (QCLot: 4906704) - continued							
ES2306286-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	97.6	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4903042)							
ES2306595-002	Anonymous	EP074: Benzene	71-43-2	25 µg/L	96.9	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	111	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4903042)							
ES2306595-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	87.3	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	92.0	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4903042)							
ES2306595-002	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	97.5	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4903041)							
ES2306595-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	108	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4903041)							
ES2306595-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	107	70.0	130
EP080: BTEXN (QCLot: 4903041)							
ES2306595-002	Anonymous	EP080: Benzene	71-43-2	25 µg/L	93.8	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	104	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	111	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	111	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	113	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	112	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4904108)							
ES2306709-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	73.2	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	68.2	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	80.8	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4904108)							
ES2306709-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.7	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	85.8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	79.7	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	75.2	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	75.4	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4904108)							
ES2306709-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	73.6	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	81.0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	76.6	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	74.6	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2306598**	Page	: 1 of 12
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 28-Feb-2023
Site	: ----	Issue Date	: 07-Mar-2023
Sampler	: JACK FLANAGAN	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075F: Haloethers	QC-4903589-002	----	**Bis(2-chloroethyl) ether**	111-44-4	68.2 %	69.1-112%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2305927--002	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2306598--002	SMGW-BH-B319	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2306598--002	SMGW-BH-B319	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG020T: Total Metals by ICP-MS	ES2306556--001	Anonymous	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**28-Feb-2023**	28-Feb-2023	✓
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**28-Feb-2023**	28-Mar-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**03-Mar-2023**	07-Mar-2023	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**28-Feb-2023**	14-Mar-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**01-Mar-2023**	28-Mar-2023	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**01-Mar-2023**	28-Mar-2023	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**03-Mar-2023**	28-Mar-2023	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**03-Mar-2023**	27-Aug-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	27-Aug-2023	✓	**02-Mar-2023**	27-Aug-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**04-Mar-2023**	28-Mar-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**06-Mar-2023**	28-Mar-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**01-Mar-2023**	02-Mar-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**06-Mar-2023**	28-Mar-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	28-Mar-2023	✓	**04-Mar-2023**	28-Mar-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	28-Mar-2023	✓	**04-Mar-2023**	28-Mar-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**01-Mar-2023**	02-Mar-2023	✓
EP005: Total Organic Carbon (TOC)							
Amber VOC Vial - Sulfuric Acid (EP005)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**----**	----	----	**06-Mar-2023**	28-Mar-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**04-Mar-2023**	11-Apr-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**04-Mar-2023**	11-Apr-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
SMGW-BH-B120, SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**04-Mar-2023**	11-Apr-2023	✓
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**06-Mar-2023**	11-Apr-2023	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**04-Mar-2023**	11-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	07-Mar-2023	✓	**04-Mar-2023**	11-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**03-Mar-2023**	14-Mar-2023	✓	**03-Mar-2023**	14-Mar-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	27-Aug-2023	✓	**03-Mar-2023**	27-Aug-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	27-Aug-2023	✓	**03-Mar-2023**	27-Aug-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	27-Aug-2023	✓	**03-Mar-2023**	27-Aug-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SMGW-BH-B120,	SMGW-BH-B319	**28-Feb-2023**	**02-Mar-2023**	27-Aug-2023	✓	**03-Mar-2023**	27-Aug-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	10	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	32	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	34	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	5	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	10	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	32	9.38	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	36	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	32	**3.13**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office:	Chatswood		
Report Results to:	Emma Stephens	Email	emma.stephens@tetratech.com
		Email:	jack.flanagan@tetratech.com
Invoices to:	general.admin@tetratech.com	Email	casey.ofarrel@tetratech.com
		Email:	ESDAT_LabReports@coffey.com

Project No:	SYDGE292575-4	Task No:	
Project Name:	WSA SBT	Laboratory:	ALS
Sampler's Name:	Jack Flanagan	Project Manager:	Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	SMGW-B14-B120	28/2	2:00	Water	Bottles	Std (5-day)		X						
2	SMGW-B14-B319			Water	Bottles	Std (5-day)		X						
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
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				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

HT

Environmental Division
Sydney
Work Order Reference
ES2306598

Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: JACK.F	Date: 28/2/23	Name: Dom.	Date: 28/2/23
Coffey	Time: 2:00	Company: ALS	Time: 2:15pm
Name:	Date: →	Name: JOCK	Date: 28/02/23
Company:	Time:	Company: ALS	Time: 1900

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
1	SBT-GW-4008	2/3/23	13:00	Water	Bottles	Std (5-day)	X													
2	SBT-GW-4010	↓	13.30	Water	Bottles	Std (5-day)	X													
3	SMGW-BH-A401		14:30	Water	Bottles	Std (5-day)	X													
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
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				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

Environmental Division Sydney
Work Order Reference
ES2307017
Telephone : +61-2-8784 8555

RELINQUISHED BY

Name: Katie Trevor — Date: 2/3/23
Coffey — Time: 16:00

Name: — Date: →
Company: — Time:

RECEIVED BY

Name: Jack — Date: 02/03/23
Company: AU — Time: 1600

Name: — Date:
Company: — Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT HT

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office:	Chatswood				katie.trevor@tetratech.com
Report Results to:	Emma Stephens	Email	emma.stephens@tetratech.com	Email:	~~jack.flanagan@tetratech.com~~
Invoices to:	general.admin@tetratech.com	Email	casey.ofarrel@tetratech.com	Email:	ESDAT_LabReports@coffey.com

Project No:	SYDGE292575-4	Task No:	
Project Name:	WSA SBT	Laboratory:	ALS
Sampler's Name:	~~Jack Flanagan~~ Katie Trevor	Project Manager:	Emma Stephens
Quote number (if different to current quoted prices):	~~SY/247/22 V2~~ SY/373/22		
Special Instructions:			

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)						NOTES
1	SBT-GW-1012	15/3/23	11:00	Water	Bottles	Std (5-day)		X											
2	SBT-GW-1013	↓	↓	Water	Bottles	Std (5-day)		X											
3	SBT-GW-1014			Water	Bottles	Std (5-day)		X											
4	QC21_150323_KT			Water	Bottles	Std (5-day)		X											
Forward to Eurofins	QC22_150323_KT			Water	Bottles	Std (5-day)		X											Forward to Eurofins
5	RB_150323_KT			Water	Bottles	Std (5-day)					X								
6	TB_150323_KT			Water	Bottles	Std (5-day)							X						
				Water	Bottles	Std (5-day)													
				Water	Bottles	Std (5-day)													
				Water	Bottles	Std (5-day)													
				Water	Bottles	Std (5-day)													
				Water	Bottles	Std (5-day)													
				Water	Bottles	Std (5-day)													
				Water	Bottles	Std (5-day)													
				Water	Bottles	Std (5-day)													
				Water	Bottles	Std (5-day)													

HT

RELINQUISHED BY		RECEIVED BY	
Name: Katie Trevor	Date: 15/3/23	Name: Jack	Date: 15/03/23
Coffey	Time: 15:00	Company: ALS	Time: 1430
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Sar... Reviewed in Good Condition ☐

All Dc...

Samp...

Lab. I...

Environmental Division Sydney
Work Order Reference
ES2308468

Telephone : + 61-2-8784 8555

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

CERTIFICATE OF ANALYSIS

Work Order	: **ES2308792**	Page	: 1 of 29
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 16-Mar-2023 15:10
Order number	: ----	Date Analysis Commenced	: 16-Mar-2023
C-O-C number	: ----	Issue Date	: 22-Mar-2023 18:50
Sampler	: Katie Trevor		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG035: Poor matrix spike recovery was obtained for Mercury on sample ES2308601 # 6. Confirmed by re-analysis.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EG020T: Some samples required dilution (X10) prior to digestion for EG020A-T due to matrix interference (high sediment content) and LOR's have been raised accordingly.
- EG020A: LORs have been raised for some samples due to matrix interference (High sample salinity)
- EK067G: LOR raised for TP due to sample matrix sample #4
- It has been noted that Nitrite is greater than NOx, however this difference is within the limits of experimental variation sample #6
- It has been noted that Nitrite is greater than NOx, however this difference is within the limits of experimental variation.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EN055: Ionic Balance out of acceptable limits for sample ES2308792-#002 due to analytes not quantified in this report.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs

- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_0001	SBT_GW_1016_S	SBT_GW_1016_M	SBT_GW_1016_D	SMGW_BH_A122
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.02	7.60	5.69	6.07	7.58
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	71	1560	25500	32800	1410
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	52	1110	21000	26300	889
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	24	66	12	39	303
Total Alkalinity as CaCO3	----	1	mg/L	24	66	12	39	303
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	3	33	1250	1670	158
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	4	558	9130	11800	223
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	7	25	139	188	164
Magnesium	7439-95-4	1	mg/L	<1	124	1100	1360	7
Sodium	7440-23-5	1	mg/L	5	636	4820	5840	115
Potassium	7440-09-7	1	mg/L	3	5	3	3	9
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.02	<0.01	0.54	<0.10	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.010	<0.010	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0010	<0.0010	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.010	<0.010	0.006
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.034	0.270	0.282	0.007
Copper	7440-50-8	0.001	mg/L	0.004	<0.001	<0.010	<0.010	0.017
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.010	<0.010	<0.001
Manganese	7439-96-5	0.001	mg/L	<0.001	0.186	1.42	1.78	0.077
Nickel	7440-02-0	0.001	mg/L	0.003	0.010	0.065	0.075	0.005
Zinc	7440-66-6	0.005	mg/L	0.018	0.060	<0.050	<0.050	0.052
Iron	7439-89-6	0.05	mg/L	<0.05	0.06	1.49	3.60	0.20
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	2.73	9.50	17.5	0.58	0.36
Cobalt	7440-48-4	0.001	mg/L	0.002	0.013	0.305	0.322	0.015

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Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	0.067	0.092	1.83	2.01	0.126
Iron	7439-89-6	0.05	mg/L	10.8	12.2	22.4	8.46	1.37
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.03	0.29	0.23	0.07
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.70	0.31	<0.01	<0.01	0.05
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.70	0.31	<0.01	<0.01	0.05
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.7	0.6	5.8	0.7	0.7
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	2.4	0.9	5.8	0.7	0.8
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.36	0.06	1.48	<0.05	0.09
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	0.65	17.7	284	368	15.6
ø Total Cations	----	0.01	meq/L	0.64	39.2	307	375	14.0
ø Ionic Balance	----	0.01	%	----	37.7	3.96	0.94	5.54
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	4	4	6	5	12
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

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			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

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			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50

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			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_0001	SBT_GW_1016_S	SBT_GW_1016_M	SBT_GW_1016_D	SMGW_BH_A122
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP074G: Trihalomethanes - Continued								
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_0001	SBT_GW_1016_S	SBT_GW_1016_M	SBT_GW_1016_D	SMGW_BH_A122
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	<2
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_0001	SBT_GW_1016_S	SBT_GW_1016_M	SBT_GW_1016_D	SMGW_BH_A122
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP075D: Nitrosamines - Continued								
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_0001	SBT_GW_1016_S	SBT_GW_1016_M	SBT_GW_1016_D	SMGW_BH_A122
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP075G: Chlorinated Hydrocarbons - Continued								
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_0001	SBT_GW_1016_S	SBT_GW_1016_M	SBT_GW_1016_D	SMGW_BH_A122
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_0001	SBT_GW_1016_S	SBT_GW_1016_M	SBT_GW_1016_D	SMGW_BH_A122
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	**0.03**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	**0.03**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	**0.18**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	**0.03**
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	**0.26**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**73.3**	**70.6**	**73.1**	**66.8**	**67.3**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**74.5**	**51.7**	**84.7**	**79.6**	**66.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT_GW_0001	SBT_GW_1016_S	SBT_GW_1016_M	SBT_GW_1016_D	SMGW_BH_A122
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00
Compound	CAS Number	LOR	Unit	ES2308792-001	ES2308792-002	ES2308792-003	ES2308792-004	ES2308792-005
				Result	Result	Result	Result	Result
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	112	116	119	129	115
Toluene-D8	2037-26-5	5	%	115	104	105	119	103
4-Bromofluorobenzene	460-00-4	5	%	116	106	107	115	104
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	30.7	29.9	38.9	38.1	28.7
2-Chlorophenol-D4	93951-73-6	1.0	%	59.5	55.0	67.0	66.6	54.8
2.4.6-Tribromophenol	118-79-6	1.0	%	72.7	67.2	84.5	81.5	65.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	70.7	66.1	77.2	74.8	67.4
Anthracene-d10	1719-06-8	1.0	%	77.9	77.9	86.6	86.2	73.2
4-Terphenyl-d14	1718-51-0	1.0	%	75.4	74.9	88.2	82.4	68.4
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	37.5	35.6	47.5	46.7	36.1
Phenol-d6	13127-88-3	2	%	28.6	29.0	37.3	37.4	27.4
2-Chlorophenol-D4	93951-73-6	2	%	56.0	51.9	63.6	63.1	53.6
2.4.6-Tribromophenol	118-79-6	2	%	60.0	54.5	72.1	66.5	52.9
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	63.9	60.4	71.2	71.5	60.1
1.2-Dichlorobenzene-D4	2199-69-1	2	%	56.1	52.1	62.3	62.6	52.5
2-Fluorobiphenyl	321-60-8	2	%	61.5	59.5	70.4	65.6	58.9
Anthracene-d10	1719-06-8	2	%	66.2	67.8	80.9	76.9	63.7
4-Terphenyl-d14	1718-51-0	2	%	67.7	69.1	83.9	76.2	63.9
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	112	119	121	132	118
Toluene-D8	2037-26-5	2	%	111	113	114	130	113
4-Bromofluorobenzene	460-00-4	2	%	118	111	113	121	111
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	100	104	103	101	103
13C8-PFOA	----	0.02	%	101	102	102	102	103

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.78**	**7.01**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**27200**	**68**	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**22200**	**64**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**1130**	**22**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**1130**	**22**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**1190**	**3**	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**9470**	**4**	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**436**	**7**	----	----	----
Magnesium	7439-95-4	1	mg/L	**1050**	**2**	----	----	----
Sodium	7440-23-5	1	mg/L	**4700**	**10**	----	----	----
Potassium	7440-09-7	1	mg/L	**55**	**3**	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.10	**0.02**	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.010	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.010	**0.004**	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.010	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.301**	**0.001**	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.010	**0.003**	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.050	**0.019**	----	----	----
Iron	7439-89-6	0.05	mg/L	**2.87**	<0.05	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.99**	**2.63**	----	----	----
Arsenic	7440-38-2	0.001	mg/L	----	----	<0.001	<0.001	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.0001	mg/L	----	----	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	----	----	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L	----	----	<0.001	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	**0.010**	**0.002**	----	----	----
Nickel	7440-02-0	0.001	mg/L	----	----	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L	----	----	<0.001	<0.001	----
Zinc	7440-66-6	0.005	mg/L	----	----	<0.005	<0.005	----
Manganese	7439-96-5	0.001	mg/L	**0.360**	**0.060**	----	----	----
Iron	7439-89-6	0.05	mg/L	**8.13**	**10.1**	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	<0.0001	<0.0001	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**2.06**	**0.08**	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.03**	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	**0.76**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	**0.76**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**7.9**	**1.4**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**7.9**	**2.2**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.97**	**0.30**	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	**0.77**	----	----	----
ø Total Anions	----	0.01	meq/L	**314**	----	----	----	----
ø Total Cations	----	0.01	meq/L	**314**	**1.02**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EN055: Ionic Balance - Continued								
ø Ionic Balance	----	0.01	%	**0.07**	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**36**	**4**	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
Styrene	100-42-5	5	µg/L	<5	<5	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP074B: Oxygenated Compounds - Continued								
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued								
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	----	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	----	----	----
EP075A: Phenolic Compounds								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP075A: Phenolic Compounds - Continued								
Phenol	108-95-2	2	µg/L	<2	<2	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	----	----	----
Fluorene	86-73-7	2	µg/L	<2	<2	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	----	----	----
Anthracene	120-12-7	2	µg/L	<2	<2	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	----	----	----
Pyrene	129-00-0	2	µg/L	<2	<2	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	----	----	----
Chrysene	218-01-9	2	µg/L	<2	<2	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	----	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	<2	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	----	----	----
Isophorone	78-59-1	2	µg/L	<2	<2	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	----	----	----
Azobenzene	103-33-3	2	µg/L	<2	<2	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	<2	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP075E: Nitroaromatics and Ketones - Continued								
Pronamide	23950-58-5	2	µg/L	<2	<2	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	----	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	----	----	----
Carbazole	86-74-8	2	µg/L	<2	<2	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	<2	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	<2	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP075I: Organochlorine Pesticides - Continued								
Aldrin	309-00-2	2	µg/L	<2	<2	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	<2	----	----	----
Endrin	72-20-8	2	µg/L	<2	<2	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	<2	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	<2	----	----	----
Diazinon	333-41-5	2	µg/L	<2	<2	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	----	----	----
Malathion	121-75-5	2	µg/L	<2	<2	----	----	----
Fenthion	55-38-9	2	µg/L	<2	<2	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	----	----	----
Ethion	563-12-2	2	µg/L	<2	<2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	61.9	66.0	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	74.4	62.0	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	120	114	----	----	----
Toluene-D8	2037-26-5	5	%	120	103	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	121	104	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	33.1	28.8	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	57.6	54.0	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	69.6	58.9	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	65.5	63.9	----	----	----
Anthracene-d10	1719-06-8	1.0	%	76.3	66.4	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	74.9	63.0	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	40.9	36.6	----	----	----
Phenol-d6	13127-88-3	2	%	33.6	28.7	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	57.3	53.3	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	58.7	46.4	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	63.5	59.8	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	56.0	54.3	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	58.9	57.7	----	----	----
Anthracene-d10	1719-06-8	2	%	69.6	60.4	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	69.6	59.6	----	----	----
EP080S: TPH(V)/BTEX Surrogates								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SMGW_BH_B123	QC23_160323_KT	RB_160323_KT	TB_160323_KT	----
			Sampling date / time	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	16-Mar-2023 09:00	----
Compound	CAS Number	LOR	Unit	ES2308792-006	ES2308792-007	ES2308792-008	ES2308792-009	--------
				Result	Result	Result	Result	----
EP080S: TPH(V)/BTEX Surrogates - Continued								
1.2-Dichloroethane-D4	17060-07-0	2	%	121	116	115	101	----
Toluene-D8	2037-26-5	2	%	116	113	107	86.4	----
4-Bromofluorobenzene	460-00-4	2	%	122	112	106	98.2	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	102	106	106	105	----
13C8-PFOA	----	0.02	%	102	104	104	104	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2308792**	Page	: 1 of 22
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 16-Mar-2023
Order number	: ----	Date Analysis Commenced	: 16-Mar-2023
C-O-C number	: ----	Issue Date	: 22-Mar-2023
Sampler	: Katie Trevor		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4934634)									
ES2308658-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.39	5.35	0.7	0% - 20%
ES2308751-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.62	6.60	0.3	0% - 20%
EA005P: pH by PC Titrator (QC Lot: 4934637)									
ES2308792-004	SBT_GW_1016_D	EA005-P: pH Value	----	0.01	pH Unit	6.07	6.10	0.5	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4934635)									
ES2308658-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	5	4	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	32800	32800	0.0	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4938356)									
ES2308444-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	7950	7900	0.6	0% - 20%
ES2308772-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	32	27	15.3	No Limit
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4938357)									
ES2308792-007	QC23_160323_KT	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	64	60	5.2	No Limit
ES2308982-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1800	1740	2.9	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4934636)									
ES2308751-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	17	17	0.0	0% - 50%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	17	17	0.0	0% - 50%
ES2308792-004	SBT_GW_1016_D	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	39	37	6.5	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	39	37	6.5	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4938324)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4938324) - continued									
ES2308792-001	SBT_GW_0001	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	3	3	0.0	No Limit
ES2308850-011	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	25	25	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4938325)									
ES2308792-001	SBT_GW_0001	ED045G: Chloride	16887-00-6	1	mg/L	4	4	0.0	No Limit
ES2308850-011	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	161	161	0.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4939008)									
ES2308591-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	297	307	3.5	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	887	903	1.8	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	7390	7430	0.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	175	179	2.1	0% - 20%
ES2308792-005	SMGW_BH_A122	ED093F: Calcium	7440-70-2	1	mg/L	164	160	2.1	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	7	6	21.9	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	115	106	8.2	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	9	9	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4939007)									
ES2308591-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.075	0.077	2.3	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.050	<0.050	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	1.72	1.77	3.0	0% - 50%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	32.0	32.2	0.5	0% - 20%
ES2308792-005	SMGW_BH_A122	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.007	0.006	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.017	0.017	0.0	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.077	0.076	1.5	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.052	0.050	2.4	0% - 50%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.20	0.18	8.4	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4938925)									
ES2308773-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4938925) - continued									
ES2308773-003	Anonymous	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.376	0.391	3.9	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.059	0.060	2.5	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.010	0.010	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.13	0.12	11.1	0% - 50%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.60	0.65	6.6	0% - 50%
ES2308658-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.001	78.5	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4939009)									
ES2308792-001	SBT_GW_0001	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4938962)									
ES2308601-007	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2308792-009	TB_160323_KT	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4938710)									
ES2308535-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.12	0.12	0.0	0% - 50%
ES2308778-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.53	0.53	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4938323)									
ES2308792-001	SBT_GW_0001	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2308850-011	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4938709)									
ES2308535-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.35	0.35	0.0	0% - 20%
ES2308778-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4938705)									
ES2308535-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.6	0.5	0.0	No Limit
ES2308778-003	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.7	1.0	28.9	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4938706)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4938706) - continued									
ES2308535-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.16	0.16	0.0	0% - 50%
ES2308778-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.16	0.10	46.6	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4938326)									
ES2308792-001	SBT_GW_0001	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2308850-011	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4939412)									
ES2308685-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	8	<1	155	No Limit
ES2308792-007	QC23_160323_KT	EP005: Total Organic Carbon	----	1	mg/L	4	2	41.7	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4937452)									
ES2308741-023	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4937452)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074B: Oxygenated Compounds (QC Lot: 4937452) - continued									
ES2308741-023	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4937452)									
ES2308741-023	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4937452)									
ES2308741-023	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4937452)									
ES2308741-023	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4937452) - continued									
ES2308741-023	Anonymous	EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4937452)									
ES2308741-023	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074F: Halogenated Aromatic Compounds (QC Lot: 4937452) - continued									
ES2308741-023	Anonymous	EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4937452)									
ES2308741-023	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4937451)									
ES2308741-023	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4937451)									
ES2308741-023	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4937451)									
ES2308741-023	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2308792-004	SBT_GW_1016_D	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4937045)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4937045) - continued									
ES2308457-004	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.12	0.12	0.0	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4937045)									
ES2308457-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4937045)									
ES2308457-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4934634)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.8	99.2	101
EA005P: pH by PC Titrator (QCLot: 4934637)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.8	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4934635)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	102	89.9	110
				<1	2100 µS/cm	101	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4938356)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	95.8	87.0	109
				<10	293 mg/L	105	75.2	126
				<10	2340 mg/L	97.6	83.0	124
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4938357)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.8	87.0	109
				<10	293 mg/L	117	75.2	126
				<10	2340 mg/L	102	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4934636)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	110	81.0	111
				----	50 mg/L	114	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4938324)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	104	82.0	122
				<1	500 mg/L	105	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4938325)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	106	80.9	127
				<1	1000 mg/L	104	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4939008)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	97.9	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	98.7	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	99.5	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	98.1	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4939007)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	101	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	94.3	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	86.4	84.0	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4939007) - continued								
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.3	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	94.2	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.7	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.2	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.8	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.5	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	89.8	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4938925)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	104	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	106	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	108	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	104	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	106	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	106	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	106	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	88.8	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	105	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	106	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	103	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4939009)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	105	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4938962)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	99.0	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4938710)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	103	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4938323)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	113	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4938709)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	100	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4938705)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	87.4	69.0	101
				<0.1	1 mg/L	107	70.0	118
				<0.1	5 mg/L	89.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4938706)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	95.8	71.3	126
				<0.01	0.442 mg/L	104	71.3	126
				<0.01	1 mg/L	95.4	71.3	126

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4938326)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	103	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4939412)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	95.9	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4934781)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	91.6	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	75.8	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	90.7	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	86.0	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	86.5	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	92.7	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	91.1	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	77.7	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	76.0	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	81.8	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	100	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	87.0	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	78.2	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	83.4	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	79.9	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	81.7	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	77.0	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	83.1	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.4	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	78.3	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	83.0	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4934781)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	89.7	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	82.4	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.1	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	85.0	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	92.7	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	83.0	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	83.3	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	87.4	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	78.9	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	76.4	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	78.3	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	78.7	69.0	121

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4934781) - continued								
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	88.4	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	80.0	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	86.1	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	80.8	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	76.6	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	76.6	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	81.7	51.6	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4937452)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	83.6	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	89.4	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	83.7	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	83.8	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	88.1	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	85.7	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	81.9	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	80.1	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	80.4	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	79.9	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	83.2	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	81.1	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	81.3	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	78.7	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4937452)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	87.4	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	94.8	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	92.5	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	92.1	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4937452)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	73.8	72.8	127
EP074D: Fumigants (QCLot: 4937452)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	79.9	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	88.5	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	86.5	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	89.6	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	90.3	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4937452)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	66.0	60.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4937452) - continued								
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	76.7	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	73.5	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	77.2	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	73.9	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	72.6	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	76.4	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	72.5	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	80.9	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	81.0	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	82.8	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	78.0	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	76.3	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	75.9	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	90.4	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	82.8	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	91.8	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	90.6	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	92.5	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	90.9	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	84.1	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	88.5	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	88.6	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	92.4	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	91.4	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	77.4	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	89.1	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4937452)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	86.2	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	85.0	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	82.3	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	88.0	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	92.7	67.0	123
EP074G: Trihalomethanes (QCLot: 4937452)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	85.2	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	82.4	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	86.5	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	88.6	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4934779)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4934779) - continued								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	57.1	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	72.8	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	71.2	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	65.4	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	92.0	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	79.6	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	88.8	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	89.2	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	71.2	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	71.2	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	75.0	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	70.1	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	69.2	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	72.4	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	72.8	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	71.9	59.1	118
EP075A: Phenolic Compounds (QCLot: 4934778)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	33.4	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	62.4	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	59.6	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	58.3	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	75.7	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	74.2	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	74.7	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	75.3	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	72.2	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	74.3	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	75.7	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	86.1	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4934778)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	66.0	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	59.0	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	66.1	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	71.3	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	69.3	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	73.6	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	77.7	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	77.1	65.8	108

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4934778) - continued								
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	77.2	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	76.9	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	90.4	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	77.8	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	79.6	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	83.4	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	# 110	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	86.3	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	93.5	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	86.5	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	84.2	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	83.9	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4934778)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	74.1	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	76.8	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	76.6	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	79.9	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	88.1	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	85.6	62.1	115
EP075D: Nitrosamines (QCLot: 4934778)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	56.9	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	69.4	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	56.8	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	55.0	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	76.5	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	75.5	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	69.7	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	77.3	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	102	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4934778)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	45.4	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	77.7	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	78.6	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	76.5	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	75.8	64.4	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 4934778) - continued								
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	75.5	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	75.3	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	76.7	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	73.3	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	72.5	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	76.3	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	71.0	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	# 57.2	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	78.6	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	81.5	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	76.6	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	84.3	57.7	110
EP075F: Haloethers (QCLot: 4934778)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	74.3	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	75.2	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	69.0	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	71.4	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4934778)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	48.8	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	46.6	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	51.9	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	# 45.7	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	52.8	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	46.8	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	45.4	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	47.0	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	67.0	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	72.6	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4934778)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	67.4	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	71.9	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	74.7	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	72.2	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	69.2	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	67.3	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	78.0	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	76.6	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4934778)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075I: Organochlorine Pesticides (QCLot: 4934778) - continued								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	75.9	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	73.3	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	73.5	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	77.4	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	80.8	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	79.0	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	75.2	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	79.9	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	80.4	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	79.4	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	77.3	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	78.1	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	78.7	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	86.0	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	81.8	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4934778)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	75.3	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	71.4	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	78.6	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	78.4	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	85.1	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	78.0	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	78.7	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	75.8	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	71.4	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	78.3	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	82.9	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4934780)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	69.8	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	82.6	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	91.8	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4937451)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	86.8	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4934780)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4934780) - continued								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	71.7	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	68.7	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	67.3	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4937451)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	86.3	75.0	127
EP080: BTEXN (QCLot: 4937451)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.0	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	92.7	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	93.8	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	95.2	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	96.5	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	96.1	70.0	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4937045)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	80.4	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	87.6	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	89.0	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4937045)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	93.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	86.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	94.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	95.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	96.6	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4937045)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	87.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	98.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	95.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	85.4	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4938324)							
ES2308792-001	SBT_GW_0001	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	119	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED045G: Chloride by Discrete Analyser (QCLot: 4938325)							
ES2308792-001	SBT_GW_0001	ED045G: Chloride	16887-00-6	50 mg/L	104	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4939007)							
ES2308581-005	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	103	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	93.6	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	100	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	103	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	106	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	104	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	100	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	102	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	105	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4938925)							
ES2308658-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	114	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	120	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	119	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	117	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	125	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	113	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	121	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4939009)							
ES2308792-002	SBT_GW_1016_S	EG035F: Mercury	7439-97-6	0.01 mg/L	72.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4938962)							
ES2308601-006	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	# 15.3	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4938710)							
ES2308535-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	95.9	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4938323)							
ES2308792-001	SBT_GW_0001	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	108	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4938709)							
ES2308535-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	96.9	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4938705)							
ES2308535-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	84.6	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4938706)							
ES2308535-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	99.9	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4938326)							
ES2308792-001	SBT_GW_0001						

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4938326) - continued							
ES2308792-001	SBT_GW_0001	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	110	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4939412)							
ES2308685-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	103	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4937452)							
ES2308741-023	Anonymous	EP074: Benzene	71-43-2	25 µg/L	91.1	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	92.3	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4937452)							
ES2308741-023	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	70.3	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	88.9	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4937452)							
ES2308741-023	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	94.3	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4937451)							
ES2308741-023	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	87.5	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4937451)							
ES2308741-023	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	90.0	70.0	130
EP080: BTEXN (QCLot: 4937451)							
ES2308741-023	Anonymous	EP080: Benzene	71-43-2	25 µg/L	91.5	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	93.2	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	101	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	102	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	100	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	105	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4937045)							
ES2308457-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	84.0	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	88.2	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	89.8	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4937045)							
ES2308457-004	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	95.4	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.2	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	96.0	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	99.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	106	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4937045)							
ES2308457-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	88.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	98.8	64.0	140

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4937045) - continued							
ES2308457-004	Anonymous	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	109	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	97.6	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2308792**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 16-Mar-2023
Site	: ----	Issue Date	: 22-Mar-2023
Sampler	: Katie Trevor	No. of samples received	: 9
Order number	: ----	No. of samples analysed	: 9

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075B: Polynuclear Aromatic Hydrocarbons	QC-4934778-002	----	**7.12-Dimethylbenz(a)anthracene**	57-97-6	110 %	50.0-108%	**Recovery greater than upper control limit**
EP075E: Nitroaromatics and Ketones	QC-4934778-002	----	**4-Aminobiphenyl**	92-67-1	57.2 %	60.1-112%	**Recovery less than lower control limit**
EP075G: Chlorinated Hydrocarbons	QC-4934778-002	----	**Hexachloroethane**	67-72-1	45.7 %	46.0-88.0%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
EG035T: Total Recoverable Mercury by FIMS	ES2308601--006	Anonymous	**Mercury**	7439-97-6	15.3 %	70.0-130%	**Recovery less than lower data quality objective**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2308792-006	SMGW_BH_B123	**Dibromo-DDE**	21655-73-2	61.9 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2308792-007	QC23_160323_KT	**Dibromo-DDE**	21655-73-2	66.0 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2308792-002	SBT_GW_1016_S	**DEF**	78-48-8	51.7 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2308792-005	SMGW_BH_A122	**DEF**	78-48-8	66.3 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2308792-007	QC23_160323_KT	**DEF**	78-48-8	62.0 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	19	5.26	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122, QC23_160323_KT	SBT_GW_1016_S, SBT_GW_1016_D, SMGW_BH_B123,	**16-Mar-2023**	**----**	----	----	**16-Mar-2023**	16-Mar-2023	✓
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122, QC23_160323_KT	SBT_GW_1016_S, SBT_GW_1016_D, SMGW_BH_B123,	**16-Mar-2023**	**----**	----	----	**16-Mar-2023**	13-Apr-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122, QC23_160323_KT	SBT_GW_1016_S, SBT_GW_1016_D, SMGW_BH_B123,	**16-Mar-2023**	**----**	----	----	**18-Mar-2023**	23-Mar-2023	✓
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122, QC23_160323_KT	SBT_GW_1016_S, SBT_GW_1016_D, SMGW_BH_B123,	**16-Mar-2023**	**----**	----	----	**16-Mar-2023**	30-Mar-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122, QC23_160323_KT	SBT_GW_1016_S, SBT_GW_1016_D, SMGW_BH_B123,	**16-Mar-2023**	**----**	----	----	**18-Mar-2023**	13-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**----**	----	----	**18-Mar-2023**	13-Apr-2023	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**----**	----	----	**20-Mar-2023**	13-Apr-2023	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**----**	----	----	**20-Mar-2023**	12-Sep-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, RB_160323_KT, TB_160323_KT	**16-Mar-2023**	**20-Mar-2023**	12-Sep-2023	✓	**20-Mar-2023**	12-Sep-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**----**	----	----	**21-Mar-2023**	13-Apr-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) RB_160323_KT, TB_160323_KT	**16-Mar-2023**	**----**	----	----	**21-Mar-2023**	13-Apr-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**----**	----	----	**20-Mar-2023**	13-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**----**	----	----	**18-Mar-2023**	18-Mar-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**----**	----	----	**20-Mar-2023**	13-Apr-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**19-Mar-2023**	13-Apr-2023	✓	**20-Mar-2023**	13-Apr-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**19-Mar-2023**	13-Apr-2023	✓	**20-Mar-2023**	13-Apr-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**----**	----	----	**18-Mar-2023**	18-Mar-2023	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**----**	----	----	**21-Mar-2023**	13-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122	SBT_GW_1016_S, SBT_GW_1016_D,	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
Amber Glass Bottle - Unpreserved (EP068)								
SMGW_BH_B123,	QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**21-Mar-2023**	26-Apr-2023	✓
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122	SBT_GW_1016_S, SBT_GW_1016_D,	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
Amber Glass Bottle - Unpreserved (EP068)								
SMGW_BH_B123,	QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**21-Mar-2023**	26-Apr-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122, QC23_160323_KT	SBT_GW_1016_S, SBT_GW_1016_D, SMGW_BH_B123,	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
EP074B: Oxygenated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122, QC23_160323_KT	SBT_GW_1016_S, SBT_GW_1016_D, SMGW_BH_B123,	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
EP074C: Sulfonated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122, QC23_160323_KT	SBT_GW_1016_S, SBT_GW_1016_D, SMGW_BH_B123,	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT_GW_0001, SBT_GW_1016_M, SMGW_BH_A122, QC23_160323_KT	SBT_GW_1016_S, SBT_GW_1016_D, SMGW_BH_B123,	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, RB_160323_KT, TB_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
Amber TOC Vial - Sulfuric Acid (EP080) RB_160323_KT	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, TB_160323_KT	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, RB_160323_KT, TB_160323_KT	**16-Mar-2023**	**17-Mar-2023**	23-Mar-2023	✓	**20-Mar-2023**	26-Apr-2023	✓
Amber TOC Vial - Sulfuric Acid (EP080) RB_160323_KT	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, TB_160323_KT	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
EP080: BTEXN							
Amber TOC Vial - Sulfuric Acid (EP080) RB_160323_KT	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, TB_160323_KT	**16-Mar-2023**	**21-Mar-2023**	30-Mar-2023	✓	**21-Mar-2023**	30-Mar-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, RB_160323_KT, TB_160323_KT	**16-Mar-2023**	**20-Mar-2023**	12-Sep-2023	✓	**21-Mar-2023**	12-Sep-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, RB_160323_KT, TB_160323_KT	**16-Mar-2023**	**20-Mar-2023**	12-Sep-2023	✓	**21-Mar-2023**	12-Sep-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, RB_160323_KT, TB_160323_KT	**16-Mar-2023**	**20-Mar-2023**	12-Sep-2023	✓	**21-Mar-2023**	12-Sep-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) SBT_GW_0001, SBT_GW_1016_S, SBT_GW_1016_M, SBT_GW_1016_D, SMGW_BH_A122, SMGW_BH_B123, QC23_160323_KT, RB_160323_KT, TB_160323_KT	**16-Mar-2023**	**20-Mar-2023**	12-Sep-2023	✓	**21-Mar-2023**	12-Sep-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	3	25	12.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	14	14.29	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	4	25	**16.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	40	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	18	**16.67**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	14	**7.14**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: ~~jack.flanagan@tetratech.com~~

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: ~~Jack Flanagan~~ Katie Trevor — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
1	SBT-GW-0001	16/3/23	9:00	Water	Bottles	Std (5-day)		X												
2	SBT-GW-1016-S			Water	Bottles	Std (5-day)		X												
3	SBT-GW-1016-M			Water	Bottles	Std (5-day)		X												
4	SBT-GW-1016-D			Water	Bottles	Std (5-day)		X												
5	SMGW-BH-A122			Water	Bottles	Std (5-day)		X												
6	SMGW-BH-B123			Water	Bottles	Std (5-day)		X												
7	QC23_160323_KT			Water	Bottles	Std (5-day)		X												
~~8~~ 4	QC24_160323_KT			Water	Bottles	Std (5-day)		X												Forward to Eurofins
8	RB_160323_KT			Water	Bottles	Std (5-day)					X									
9	TB_160323_KT			Water	Bottles	Std (5-day)							X							
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

RELINQUISHED BY

Name: Katie Trevor — Date: 16/3/23
Coffey — Time: 14:30

Name: — Date:
Company: — Time:

RECEIVED BY

Name: — Date: 16/3/23
Company: — Time: 3:10

Name: — Date:
Company: — Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. F

Environmental Division Sydney
Work Order Reference
ES2308792
Telephone : +61-2-8784 8555

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Please forward QC24_160323_KT to Eurofins

Subcon / Forward Lab / Split WO
Lab / Analysis: QC24 - 160323-KT
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No: ES2308792
Attached By PO / Internal Sheet:

HT

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

CERTIFICATE OF ANALYSIS

Work Order	: **ES2310447**	Page	: 1 of 29
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 29-Mar-2023 15:30
Order number	: ----	Date Analysis Commenced	: 29-Mar-2023
C-O-C number	: ----	Issue Date	: 06-Apr-2023 18:24
Sampler	: Katie Trevor		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 14		
No. of samples analysed	: 8		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Rassem Ayoubi	Senior Organic Chemist	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK061G: LOR raised for TKN on various samples due to sample matrix.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG035: Positive Mercury results ES2310447 #1 has been confirmed by reanalysis.
- EP231X: PFAS results for sample #1 confirmed by re-extraction and re-analysis.
- TDS by method EA-015 may bias high for samples 7 and 8 due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.52	6.48	6.68	6.66	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	18000	20400	19600	19000	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	11200	13500	12800	12900	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	258	191	264	257	----
Total Alkalinity as CaCO3	----	1	mg/L	258	191	264	257	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	948	863	899	869	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	5570	6640	6160	5980	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	121	156	171	168	----
Magnesium	7439-95-4	1	mg/L	382	638	552	546	----
Sodium	7440-23-5	1	mg/L	2920	3980	3470	3490	----
Potassium	7440-09-7	1	mg/L	52	4	4	4	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.07	<0.01	<0.01	----
Arsenic	7440-38-2	0.001	mg/L	0.005	0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	0.098	0.136	0.105	0.108	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L	1.52	2.34	2.74	2.76	----
Nickel	7440-02-0	0.001	mg/L	0.286	0.080	0.040	0.042	----
Zinc	7440-66-6	0.005	mg/L	0.140	0.032	0.026	0.033	----
Iron	7439-89-6	0.05	mg/L	12.8	23.0	0.70	0.72	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	61.9	41.2	86.1	87.2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Arsenic	7440-38-2	0.001	mg/L	----	----	----	----	<0.001
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	----	<0.0001
Chromium	7440-47-3	0.001	mg/L	----	----	----	----	<0.001
Copper	7440-50-8	0.001	mg/L	----	----	----	----	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.210	0.227	0.201	0.208	----
Nickel	7440-02-0	0.001	mg/L	----	----	----	----	<0.001
Lead	7439-92-1	0.001	mg/L	----	----	----	----	<0.001
Zinc	7440-66-6	0.005	mg/L	----	----	----	----	<0.005
Manganese	7439-96-5	0.001	mg/L	3.80	5.63	4.55	4.57	----
Iron	7439-89-6	0.05	mg/L	167	162	177	176	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	0.0005	<0.0001	<0.0001	<0.0001	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	----	----	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.20	0.27	0.20	0.18	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	0.01	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.02	0.04	0.03	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.02	0.04	0.04	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	5.0	5.5	9.7	9.8	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	5.0	5.5	9.7	9.8	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	2.17	3.20	2.48	2.72	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.11	0.06	0.07	<0.01	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	182	209	198	192	----
ø Total Cations	----	0.01	meq/L	166	234	205	205	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued								
ø Ionic Balance	----	0.01	%	**4.66**	**5.52**	**1.80**	**3.35**	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**10**	**9**	**8**	**7**	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP074B: Oxygenated Compounds - Continued								
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	<5	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	----
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	----
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	----
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	----
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	----
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
EP075A: Phenolic Compounds								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	----
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	----
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	----
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	----
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	----
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	----
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	----
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	----
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	----
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	----
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	----
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	----
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	----
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	----
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	----
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	----
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	----
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	----
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	----
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	----
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	----
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	----
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	----
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	----
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	----
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	----
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	----
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	----
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	----
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	----
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	----
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	----
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	----
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	----
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	----
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	----
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	----
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	----
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	----
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	----
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	----
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	----
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	----
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	----
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	**0.11**	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.11**	<0.01	<0.01	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**51.4**	**54.0**	**56.2**	**55.2**	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**50.0**	**53.2**	**55.7**	**54.2**	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**113**	**96.4**	**106**	**94.0**	----
Toluene-D8	2037-26-5	5	%	**108**	**97.7**	**98.4**	**79.1**	----
4-Bromofluorobenzene	460-00-4	5	%	**110**	**98.2**	**105**	**89.8**	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**20.1**	**22.2**	**21.5**	**23.7**	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**40.7**	**37.6**	**37.5**	**39.6**	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**55.1**	**43.4**	**41.6**	**45.1**	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	**44.7**	**39.6**	**42.1**	**48.1**	----
Anthracene-d10	1719-06-8	1.0	%	**58.4**	**54.5**	**51.1**	**51.9**	----
4-Terphenyl-d14	1718-51-0	1.0	%	**64.2**	**60.1**	**53.8**	**54.8**	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	**29.9**	**28.9**	**28.7**	**31.1**	----
Phenol-d6	13127-88-3	2	%	**13.2**	**14.9**	**15.6**	**14.5**	----
2-Chlorophenol-D4	93951-73-6	2	%	**33.7**	**34.8**	**32.9**	**33.8**	----
2.4.6-Tribromophenol	118-79-6	2	%	**49.9**	**40.1**	**38.5**	**39.3**	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	**40.0**	**43.2**	**38.2**	**41.3**	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	**27.2**	**24.9**	**28.3**	**35.5**	----
2-Fluorobiphenyl	321-60-8	2	%	**45.2**	**44.6**	**47.0**	**51.1**	----
Anthracene-d10	1719-06-8	2	%	**52.7**	**60.0**	**56.1**	**54.0**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012_S	SBT-GW-1013_S	SBT-GW-1014_S	QC25_290323_KT	RB_290323_KT
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00
Compound	CAS Number	LOR	Unit	ES2310447-001	ES2310447-002	ES2310447-003	ES2310447-004	ES2310447-005
				Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates - Continued								
4-Terphenyl-d14	1718-51-0	2	%	53.4	66.3	57.0	56.5	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	102	109	96.6	98.6	104
Toluene-D8	2037-26-5	2	%	100	107	91.2	96.4	102
4-Bromofluorobenzene	460-00-4	2	%	114	126	108	97.1	111
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	99.1	98.9	100	98.8	108
13C8-PFOA	----	0.02	%	97.8	99.0	97.0	99.1	99.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	----	6.63	7.46	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	390	21100	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	----	304	15200	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	65	265	----	----
Total Alkalinity as CaCO3	----	1	mg/L	----	65	265	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	24	23	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	69	6870	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	16	444	----	----
Magnesium	7439-95-4	1	mg/L	----	9	225	----	----
Sodium	7440-23-5	1	mg/L	----	45	3730	----	----
Potassium	7440-09-7	1	mg/L	----	10	48	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	0.35	0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	----	0.002	0.005	----	----
Cadmium	7440-43-9	0.0001	mg/L	----	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	----	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	----	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	----	0.005	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	----	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	----	0.017	0.214	----	----
Nickel	7440-02-0	0.001	mg/L	----	0.002	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	----	0.008	0.037	----	----
Iron	7439-89-6	0.05	mg/L	----	0.30	1.13	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	----	1.02	0.04	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	----	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	----	**0.117**	**0.225**	----	----
Iron	7439-89-6	0.05	mg/L	----	**1.16**	**1.95**	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	<0.0001	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	----	**5.84**	**7.50**	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	----	<0.01	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	----	**0.02**	<0.01	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	----	**0.02**	<0.01	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	**7.8**	**9.2**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	**7.8**	**9.2**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	**1.23**	**0.06**	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	**0.82**	**0.02**	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	**3.74**	**200**	----	----
ø Total Cations	----	0.01	meq/L	----	**3.75**	**204**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EN055: Ionic Balance - Continued								
ø Ionic Balance	----	0.01	%	----	0.10	1.13	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	----	18	10	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	<0.5	<0.5	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	<0.5	<0.5	----	----
beta-BHC	319-85-7	0.5	µg/L	----	<0.5	<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L	----	<0.5	<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L	----	<0.5	<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L	----	<0.5	<0.5	----	----
Aldrin	309-00-2	0.5	µg/L	----	<0.5	<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	<0.5	<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	----	<0.5	<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	----	<0.5	<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	----	<0.5	<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L	----	<0.5	<0.5	----	----
4.4`-DDE	72-55-9	0.5	µg/L	----	<0.5	<0.5	----	----
Endrin	72-20-8	0.5	µg/L	----	<0.5	<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	----	<0.5	<0.5	----	----
4.4`-DDD	72-54-8	0.5	µg/L	----	<0.5	<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	----	<0.5	<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	<0.5	<0.5	----	----
4.4`-DDT	50-29-3	2.0	µg/L	----	<2.0	<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L	----	<0.5	<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L	----	<2.0	<2.0	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	----	<0.5	<0.5	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	----	<0.5	<0.5	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	<0.5	<0.5	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	<0.5	<0.5	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	----	<0.5	<0.5	----	----
Monocrotophos	6923-22-4	2.0	µg/L	----	<2.0	<2.0	----	----
Dimethoate	60-51-5	0.5	µg/L	----	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.5	µg/L	----	<0.5	<0.5	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	<0.5	<0.5	----	----
Parathion-methyl	298-00-0	2.0	µg/L	----	<2.0	<2.0	----	----
Malathion	121-75-5	0.5	µg/L	----	<0.5	<0.5	----	----
Fenthion	55-38-9	0.5	µg/L	----	<0.5	<0.5	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	----	<0.5	<0.5	----	----
Parathion	56-38-2	2.0	µg/L	----	<2.0	<2.0	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	<0.5	<0.5	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	----	<0.5	<0.5	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	<0.5	<0.5	----	----
Fenamiphos	22224-92-6	0.5	µg/L	----	<0.5	<0.5	----	----
Prothiofos	34643-46-4	0.5	µg/L	----	<0.5	<0.5	----	----
Ethion	563-12-2	0.5	µg/L	----	<0.5	<0.5	----	----
Carbophenothion	786-19-6	0.5	µg/L	----	<0.5	<0.5	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	----	<0.5	<0.5	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	----	<1	<1	----	----
Toluene	108-88-3	2	µg/L	----	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	----	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	<2	<2	----	----
Styrene	100-42-5	5	µg/L	----	<5	<5	----	----
ortho-Xylene	95-47-6	2	µg/L	----	<2	<2	----	----
Isopropylbenzene	98-82-8	5	µg/L	----	<5	<5	----	----
n-Propylbenzene	103-65-1	5	µg/L	----	<5	<5	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	----	<5	<5	----	----
sec-Butylbenzene	135-98-8	5	µg/L	----	<5	<5	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	----	<5	<5	----	----
tert-Butylbenzene	98-06-6	5	µg/L	----	<5	<5	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	----	<5	<5	----	----
n-Butylbenzene	104-51-8	5	µg/L	----	<5	<5	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	----	<50	<50	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	----	<50	<50	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	----	<50	<50	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP074B: Oxygenated Compounds - Continued								
2-Hexanone (MBK)	591-78-6	50	µg/L	----	<50	<50	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	<5	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	----	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L	----	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L	----	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L	----	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L	----	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	----	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	----	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L	----	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	----	<5	<5	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	----	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	----	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	----	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L	----	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L	----	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	----	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L	----	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L	----	<5	<5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	----	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	----	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L	----	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L	----	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L	----	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	----	<5	<5	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	----	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L	----	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L	----	<5	<5	----	----
Bromoform	75-25-2	5	µg/L	----	<5	<5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L	----	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L	----	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L	----	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L	----	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L	----	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L	----	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L	----	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	----	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L	----	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	----	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	<0.5	<0.5	----	----
EP075A: Phenolic Compounds								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP075A: Phenolic Compounds - Continued								
Phenol	108-95-2	2	µg/L	----	<2	<2	----	----
2-Chlorophenol	95-57-8	2	µg/L	----	<2	<2	----	----
2-Methylphenol	95-48-7	2	µg/L	----	<2	<2	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	<4	<4	----	----
2-Nitrophenol	88-75-5	2	µg/L	----	<2	<2	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	----	<2	<2	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	----	<2	<2	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	----	<2	<2	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	<2	<2	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	<2	<2	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	<2	<2	----	----
Pentachlorophenol	87-86-5	4	µg/L	----	<4	<4	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	<2	<2	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	----	<2	<2	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	----	<2	<2	----	----
Acenaphthylene	208-96-8	2	µg/L	----	<2	<2	----	----
Acenaphthene	83-32-9	2	µg/L	----	<2	<2	----	----
Fluorene	86-73-7	2	µg/L	----	<2	<2	----	----
Phenanthrene	85-01-8	2	µg/L	----	<2	<2	----	----
Anthracene	120-12-7	2	µg/L	----	<2	<2	----	----
Fluoranthene	206-44-0	2	µg/L	----	<2	<2	----	----
Pyrene	129-00-0	2	µg/L	----	<2	<2	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	<2	<2	----	----
Benz(a)anthracene	56-55-3	2	µg/L	----	<2	<2	----	----
Chrysene	218-01-9	2	µg/L	----	<2	<2	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	<4	<4	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	<2	<2	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	----	<2	<2	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	----	<2	<2	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	<2	<2	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	----	<2	<2	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	----	<2	<2	----	----
^ Sum of PAHs	----	2	µg/L	----	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	<2	<2	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	<2	<2	----	----
Diethyl phthalate	84-66-2	2	µg/L	----	<2	<2	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	----	<2	<2	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	----	<2	<2	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	<10	<10	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	----	<2	<2	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	<2	<2	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	<2	<2	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	<4	<4	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	----	<2	<2	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	<2	<2	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	----	<2	<2	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	<2	<2	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	<4	<4	----	----
Methapyrilene	91-80-5	2	µg/L	----	<2	<2	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	----	<2	<2	----	----
Acetophenone	98-86-2	2	µg/L	----	<2	<2	----	----
Nitrobenzene	98-95-3	2	µg/L	----	<2	<2	----	----
Isophorone	78-59-1	2	µg/L	----	<2	<2	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	<4	<4	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	<4	<4	----	----
1-Naphthylamine	134-32-7	2	µg/L	----	<2	<2	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	<2	<2	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	<2	<2	----	----
Azobenzene	103-33-3	2	µg/L	----	<2	<2	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	<2	<2	----	----
Phenacetin	62-44-2	2	µg/L	----	<2	<2	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	----	<2	<2	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	----	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP075E: Nitroaromatics and Ketones - Continued								
Pronamide	23950-58-5	2	µg/L	----	<2	<2	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	<2	<2	----	----
Chlorobenzilate	510-15-6	2	µg/L	----	<2	<2	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	<2	<2	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	<2	<2	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	<2	<2	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	<2	<2	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	<2	<2	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	<2	<2	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	<2	<2	----	----
Hexachloroethane	67-72-1	2	µg/L	----	<2	<2	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	<2	<2	----	----
Hexachloropropylene	1888-71-7	2	µg/L	----	<2	<2	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	----	<2	<2	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	<10	<10	----	----
Pentachlorobenzene	608-93-5	2	µg/L	----	<2	<2	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	<4	<4	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	----	<2	<2	----	----
4-Chloroaniline	106-47-8	2	µg/L	----	<2	<2	----	----
2-Nitroaniline	88-74-4	4	µg/L	----	<4	<4	----	----
3-Nitroaniline	99-09-2	4	µg/L	----	<4	<4	----	----
Dibenzofuran	132-64-9	2	µg/L	----	<2	<2	----	----
4-Nitroaniline	100-01-6	2	µg/L	----	<2	<2	----	----
Carbazole	86-74-8	2	µg/L	----	<2	<2	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	----	<2	<2	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	----	<2	<2	----	----
beta-BHC	319-85-7	2	µg/L	----	<2	<2	----	----
gamma-BHC	58-89-9	2	µg/L	----	<2	<2	----	----
delta-BHC	319-86-8	2	µg/L	----	<2	<2	----	----
Heptachlor	76-44-8	2	µg/L	----	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP075I: Organochlorine Pesticides - Continued								
Aldrin	309-00-2	2	µg/L	----	<2	<2	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	----	<2	<2	----	----
alpha-Endosulfan	959-98-8	2	µg/L	----	<2	<2	----	----
4.4`-DDE	72-55-9	2	µg/L	----	<2	<2	----	----
Dieldrin	60-57-1	2	µg/L	----	<2	<2	----	----
Endrin	72-20-8	2	µg/L	----	<2	<2	----	----
beta-Endosulfan	33213-65-9	2	µg/L	----	<2	<2	----	----
4.4`-DDD	72-54-8	2	µg/L	----	<2	<2	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	----	<2	<2	----	----
4.4`-DDT	50-29-3	4	µg/L	----	<4	<4	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	----	<4	<4	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	----	<4	<4	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	----	<2	<2	----	----
Dimethoate	60-51-5	2	µg/L	----	<2	<2	----	----
Diazinon	333-41-5	2	µg/L	----	<2	<2	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	----	<2	<2	----	----
Malathion	121-75-5	2	µg/L	----	<2	<2	----	----
Fenthion	55-38-9	2	µg/L	----	<2	<2	----	----
Chlorpyrifos	2921-88-2	2	µg/L	----	<2	<2	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	----	<2	<2	----	----
Chlorfenvinphos	470-90-6	2	µg/L	----	<2	<2	----	----
Prothiofos	34643-46-4	2	µg/L	----	<2	<2	----	----
Ethion	563-12-2	2	µg/L	----	<2	<2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	----	50.9	57.6	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	----	51.9	54.4	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	----	115	126	----	----
Toluene-D8	2037-26-5	5	%	----	109	117	----	----
4-Bromofluorobenzene	460-00-4	5	%	----	109	121	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	----	22.9	22.8	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	----	40.1	38.7	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	----	48.2	46.8	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	----	55.9	55.6	----	----
Anthracene-d10	1719-06-8	1.0	%	----	58.6	55.5	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	----	61.6	55.5	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	----	29.7	30.8	----	----
Phenol-d6	13127-88-3	2	%	----	14.0	17.4	----	----
2-Chlorophenol-D4	93951-73-6	2	%	----	32.6	36.2	----	----
2.4.6-Tribromophenol	118-79-6	2	%	----	39.2	41.1	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	----	39.2	41.4	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	----	42.3	44.0	----	----
2-Fluorobiphenyl	321-60-8	2	%	----	58.4	61.1	----	----
Anthracene-d10	1719-06-8	2	%	----	57.8	58.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_290323_KT	SBT-GW-4010	SBT-GW-4008	----	----
			Sampling date / time	29-Mar-2023 11:00	29-Mar-2023 11:00	29-Mar-2023 11:00	----	----
Compound	CAS Number	LOR	Unit	ES2310447-006	ES2310447-007	ES2310447-008	--------	--------
				Result	Result	Result	----	----
EP075T: Base/Neutral Extractable Surrogates - Continued								
4-Terphenyl-d14	1718-51-0	2	%	----	59.3	59.1	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	105	105	113	----	----
Toluene-D8	2037-26-5	2	%	102	101	108	----	----
4-Bromofluorobenzene	460-00-4	2	%	114	115	124	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	98.0	105	97.7	----	----
13C8-PFOA	----	0.02	%	96.6	97.8	99.2	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2310447**	Page	: 1 of 22
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 29-Mar-2023
Order number	: ----	Date Analysis Commenced	: 29-Mar-2023
C-O-C number	: ----	Issue Date	: 06-Apr-2023
Sampler	: Katie Trevor		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 14		
No. of samples analysed	: 8		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Rassem Ayoubi	Senior Organic Chemist	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4961199)									
ES2310442-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.18	7.69	6.9	0% - 20%
ES2310447-003	SBT-GW-1014_S	EA005-P: pH Value	----	0.01	pH Unit	6.68	6.73	0.7	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4961193)									
ES2310417-005	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	929	933	0.5	0% - 20%
ES2310457-007	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	179	175	2.1	0% - 20%
ES2310447-003	SBT-GW-1014_S	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	19600	19800	1.5	0% - 20%
ES2310159-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	16200	16900	4.0	0% - 20%
ES2310376-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	233	235	0.9	0% - 20%
ES2310334-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	422	424	0.4	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4966660)									
ES2310444-021	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	132	126	5.2	0% - 50%
ES2310601-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	5880	5660	3.7	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4961198)									
ES2310411-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	8	6	30.2	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	8	6	30.2	No Limit
ES2310376-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	50	51	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	50	51	0.0	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4961200)									
ME2300615-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
ED037P: Alkalinity by PC Titrator (QC Lot: 4961200) - continued									
ME2300615-003	Anonymous	ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	38	36	4.5	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	38	36	4.5	0% - 20%
ES2310447-003	SBT-GW-1014_S	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	264	265	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	264	265	0.0	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4961577)									
EW2301441-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	53	53	0.0	0% - 20%
ES2310376-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	13	12	8.0	0% - 50%
ED045G: Chloride by Discrete Analyser (QC Lot: 4961578)									
EW2301441-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	243	241	0.8	0% - 20%
ES2310376-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	27	27	0.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4964559)									
ES2310229-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	<1	<1	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit
ES2310447-008	SBT-GW-4008	ED093F: Calcium	7440-70-2	1	mg/L	444	438	1.3	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	225	222	1.4	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	3730	3670	1.7	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	48	47	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4964558)									
ES2310229-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.006	<0.005	21.1	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2310447-008	SBT-GW-4008	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.005	0.006	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4964558) - continued									
ES2310447-008	SBT-GW-4008	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.214	0.208	3.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.037	0.040	7.9	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	1.13	1.11	1.7	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4965012)									
ES2310447-008	SBT-GW-4008	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.225	0.224	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.039	0.038	3.9	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.04	0.03	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.95	1.93	1.2	0% - 20%
ES2310444-019	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.003	96.8	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.165	0.168	1.9	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.009	0.008	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.039	0.038	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4964560)									
ES2310229-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2310447-007	SBT-GW-4010	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4965015)									
ES2310447-005	RB_290323_KT	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2310649-005	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4965053)									
EN2303248-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.08	0.07	0.0	No Limit
ES2310413-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.13	0.13	0.0	0% - 50%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4961575)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4961575) - continued									
EW2301441-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2310376-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4965054)									
EN2303248-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2310413-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4965049)									
EN2303248-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.6	0.6	0.0	No Limit
ES2310447-001	SBT-GW-1012_S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	5.0	4.6	8.7	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4965048)									
EN2303248-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.02	0.03	0.0	No Limit
ES2310447-001	SBT-GW-1012_S	EK067G: Total Phosphorus as P	----	0.01	mg/L	2.17	2.20	1.4	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4965050)									
ES2310459-004	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.01	0.07	146	No Limit
EW2301441-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.20	0.18	14.2	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4961576)									
ES2310376-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4962064)									
ES2310159-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	900	970	7.4	0% - 20%
ES2310380-005	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	12	16	25.6	0% - 50%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4963113)									
ES2310447-001	SBT-GW-1012_S	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4963113) - continued									
ES2310447-007	SBT-GW-4010	EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4963113)									
ES2310447-001	SBT-GW-1012_S	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4963113)									
ES2310447-001	SBT-GW-1012_S	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 4963113)									
ES2310447-001	SBT-GW-1012_S	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4963113)									
ES2310447-001	SBT-GW-1012_S	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4963113) - continued									
ES2310447-001	SBT-GW-1012_S	EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4963113) - continued									
ES2310447-007	SBT-GW-4010	EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4963113)									
ES2310447-001	SBT-GW-1012_S	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4963113)									
ES2310447-001	SBT-GW-1012_S	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4963112)									
ES2310447-001	SBT-GW-1012_S	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4963112)									
ES2310447-001	SBT-GW-1012_S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4963112)									
ES2310447-001	SBT-GW-1012_S	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 4963112) - continued									
ES2310447-001	SBT-GW-1012_S	EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2310447-007	SBT-GW-4010	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4961199)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.6	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4961193)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	103	89.9	110
				<1	2100 µS/cm	94.6	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4966660)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	97.8	87.0	109
				<10	293 mg/L	105	75.2	126
				<10	2340 mg/L	102	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4961198)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	96.9	81.0	111
				----	50 mg/L	104	80.0	120
ED037P: Alkalinity by PC Titrator (QCLot: 4961200)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	97.0	81.0	111
				----	50 mg/L	105	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4961577)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	115	82.0	122
				<1	500 mg/L	102	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4961578)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	121	80.9	127
				<1	1000 mg/L	89.4	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4964559)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	92.0	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	99.4	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	99.8	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4964558)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	88.8	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	92.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	92.0	85.0	111

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4964558) - continued								
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	90.6	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	89.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	94.2	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.8	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.9	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	92.6	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	90.8	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4965012)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.8	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	91.2	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.2	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.9	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	90.8	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	87.0	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.8	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.9	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.2	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	91.3	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.7	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4964560)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	101	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4965015)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.2	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4965053)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	103	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4961575)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	101	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4965054)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	108	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4965049)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	95.2	69.0	101
				<0.1	1 mg/L	97.1	70.0	118
				<0.1	5 mg/L	101	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4965048)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4965048) - continued								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	88.6	71.3	126
				<0.01	0.442 mg/L	96.3	71.3	126
				<0.01	1 mg/L	99.6	71.3	126
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4965050)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	86.3	71.3	126
				<0.01	0.442 mg/L	91.1	71.3	126
				<0.01	1 mg/L	98.7	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4961576)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	98.0	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4962064)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	96.8	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4961216)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	77.5	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	78.8	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	79.2	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	77.4	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	83.9	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	90.7	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	89.5	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	86.4	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	87.0	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	97.9	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	87.2	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	92.0	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	90.3	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	94.8	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	92.8	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	88.0	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	88.2	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	88.4	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	88.7	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	82.1	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	87.4	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4961216)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4961216) - continued								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	100	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	101	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.7	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	82.0	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	84.4	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	82.2	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	75.1	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	76.3	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	79.6	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	90.3	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	76.0	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	80.0	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	87.0	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	85.2	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	76.7	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	88.4	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	83.4	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	88.4	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	89.0	51.6	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4963113)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	104	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	100	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	99.1	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	103	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	99.9	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	99.2	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	95.9	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	95.4	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	95.7	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	97.8	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	98.2	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	96.0	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	92.2	65.0	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074B: Oxygenated Compounds (QCLot: 4963113)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	108	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	95.6	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	114	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	101	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4963113)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	104	72.8	127
EP074D: Fumigants (QCLot: 4963113)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	101	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	104	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	102	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	108	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	110	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4963113)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	82.6	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	94.2	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	90.7	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	91.7	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	86.9	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	94.7	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	97.2	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	73.6	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	96.1	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	102	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	104	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	99.7	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	102	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	97.0	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	110	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	99.0	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	110	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	109	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	105	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	94.4	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	100	66.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4963113) - continued								
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	102	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	107	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	109	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	122	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	103	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	109	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4963113)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	105	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	105	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	97.5	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	100.0	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	102	67.0	123
EP074G: Trihalomethanes (QCLot: 4963113)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	107	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	102	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	98.8	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	100	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4961213)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	65.8	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	72.0	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	70.6	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	74.0	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	68.2	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	74.4	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	77.3	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	84.6	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	85.8	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	83.2	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	77.7	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	72.5	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	80.3	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	89.2	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.2	61.2	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4961213) - continued								
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	90.1	59.1	118
EP075A: Phenolic Compounds (QCLot: 4961215)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	39.4	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	59.1	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	54.9	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	49.6	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	68.7	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	63.7	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	67.7	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	68.3	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	77.8	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	78.4	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	77.4	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	64.7	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4961215)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	69.4	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	82.0	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	76.5	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	81.1	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	80.2	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	80.6	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	85.8	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	87.2	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	85.9	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	84.7	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	75.0	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	71.3	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	72.2	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	80.3	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	# 114	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	79.1	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	74.0	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	75.6	59.6	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4961215) - continued								
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	78.0	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	75.7	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4961215)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	78.4	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	86.6	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	93.2	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	75.1	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	106	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	85.6	62.1	115
EP075D: Nitrosamines (QCLot: 4961215)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	52.1	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	68.2	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	53.7	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	52.8	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	73.7	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	68.1	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	102	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	78.3	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	110	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4961215)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	44.4	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	69.6	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	# 66.4	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	71.0	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	80.2	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	78.0	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	94.9	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	65.1	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	73.5	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	83.1	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	63.7	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	66.2	57.8	101

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP075E: Nitroaromatics and Ketones (QCLot: 4961215) - continued								
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	70.8	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	70.4	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	84.2	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	74.5	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	72.6	57.7	110
EP075F: Haloethers (QCLot: 4961215)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	73.2	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	69.8	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	78.6	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	75.6	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4961215)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	63.3	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	62.4	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	63.5	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	60.5	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	63.4	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	61.0	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	68.6	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	24.6	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	72.6	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	75.7	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4961215)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	56.3	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	69.3	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	78.4	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	69.9	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	80.1	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	55.8	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	86.6	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	76.5	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4961215)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	74.3	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	77.0	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	76.6	51.0	111

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075I: Organochlorine Pesticides (QCLot: 4961215) - continued								
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	80.9	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	79.2	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	80.6	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	77.2	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	71.3	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	73.6	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	71.2	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	71.2	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	82.0	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	71.6	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	72.8	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	69.3	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4961215)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	83.9	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	72.0	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	91.5	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	85.8	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	101	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	86.8	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	85.5	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	86.6	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	82.8	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	82.3	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	78.5	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4961214)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	71.7	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	86.3	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	89.7	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4963112)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	99.7	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4961214)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4961214) - continued								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	67.5	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	90.4	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	91.4	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4963112)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	98.8	75.0	127
EP080: BTEXN (QCLot: 4963112)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	98.8	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	88.7	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	89.4	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	87.7	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	93.5	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	87.3	75.5	124
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4964889)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	78.8	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	95.2	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	90.4	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4964889)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	91.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	114	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	93.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	99.0	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4964889)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	96.2	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	98.8	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	89.6	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	86.2	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Matrix Spike (MS) Report: Spike	SpikeRecovery(%)	Acceptable Limits (%)

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4961577)							
ES2310376-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	130	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4961578)							
ES2310376-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	119	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4964558)							
ES2310229-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	93.5	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	99.4	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	98.4	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	94.9	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	95.3	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	107	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	101	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	93.6	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	99.1	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4965012)							
ES2310444-020	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	95.8	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.3	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	101	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	96.4	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	98.0	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	105	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	102	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	96.6	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.2	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4964560)							
ES2310229-003	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	70.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4965015)							
ES2310447-006	TB_290323_KT	EG035T: Mercury	7439-97-6	0.01 mg/L	88.3	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4965053)							
EN2303248-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	78.2	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4961575)							
ES2310376-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	112	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4965054)							
EN2303248-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	99.7	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4965049)							
EN2303248-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	97.2	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4965048)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4965048) - continued							
EN2303248-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	94.6	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4965050)							
ES2310459-005	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	100	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4961576)							
ES2310376-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	97.9	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4962064)							
ES2310159-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	# Not Determined	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4963113)							
ES2310447-001	SBT-GW-1012_S	EP074: Benzene	71-43-2	25 µg/L	103	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	100	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4963113)							
ES2310447-001	SBT-GW-1012_S	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	93.7	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	94.7	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4963113)							
ES2310447-001	SBT-GW-1012_S	EP074: Chlorobenzene	108-90-7	25 µg/L	100	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4963112)							
ES2310447-001	SBT-GW-1012_S	EP080: C6 - C9 Fraction	----	325 µg/L	77.2	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4963112)							
ES2310447-001	SBT-GW-1012_S	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	84.5	70.0	130
EP080: BTEXN (QCLot: 4963112)							
ES2310447-001	SBT-GW-1012_S	EP080: Benzene	71-43-2	25 µg/L	101	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	84.9	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	85.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	83.7	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	91.0	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	85.1	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2310447**	Page	: 1 of 15
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 29-Mar-2023
Site	: ----	Issue Date	: 06-Apr-2023
Sampler	: Katie Trevor	No. of samples received	: 14
Order number	: ----	No. of samples analysed	: 8

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075B: Polynuclear Aromatic Hydrocarbons	QC-4961215-002	----	**7.12-Dimethylbenz(a)anthracene**	57-97-6	114 %	50.0-108%	**Recovery greater than upper control limit**
EP075E: Nitroaromatics and Ketones	QC-4961215-002	----	**Nitrobenzene**	98-95-3	66.4 %	68.3-112%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
EP005: Total Organic Carbon (TOC)	ES2310159--002	Anonymous	**Total Organic Carbon**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2310447-001	SBT-GW-1012_S	**Dibromo-DDE**	21655-73-2	51.4 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2310447-002	SBT-GW-1013_S	**Dibromo-DDE**	21655-73-2	54.0 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2310447-003	SBT-GW-1014_S	**Dibromo-DDE**	21655-73-2	56.2 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2310447-004	QC25_290323_KT	**Dibromo-DDE**	21655-73-2	55.2 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2310447-007	SBT-GW-4010	**Dibromo-DDE**	21655-73-2	50.9 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2310447-008	SBT-GW-4008	**Dibromo-DDE**	21655-73-2	57.6 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2310447-001	SBT-GW-1012_S	**DEF**	78-48-8	50.0 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2310447-002	SBT-GW-1013_S	**DEF**	78-48-8	53.2 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2310447-003	SBT-GW-1014_S	**DEF**	78-48-8	55.7 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2310447-004	QC25_290323_KT	**DEF**	78-48-8	54.2 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2310447-007	SBT-GW-4010	**DEF**	78-48-8	51.9 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2310447-008	SBT-GW-4008	**DEF**	78-48-8	54.4 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	0				
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / *Client Sample ID(s)*		***Sample Date***	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**----**	----	----	**29-Mar-2023**	29-Mar-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**----**	----	----	**29-Mar-2023**	26-Apr-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**----**	----	----	**31-Mar-2023**	05-Apr-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	----	----	----	**29-Mar-2023**	12-Apr-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	----	----	----	**30-Mar-2023**	26-Apr-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	----	----	----	**30-Mar-2023**	26-Apr-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	----	----	----	**30-Mar-2023**	26-Apr-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	----	----	----	**30-Mar-2023**	25-Sep-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**31-Mar-2023**	25-Sep-2023	✓	**31-Mar-2023**	25-Sep-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
RB_290323_KT,	TB_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	----	----	----	**02-Apr-2023**	26-Apr-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)								
RB_290323_KT,	TB_290323_KT	**29-Mar-2023**	----	----	----	**02-Apr-2023**	26-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**----**	----	----	**31-Mar-2023**	26-Apr-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**----**	----	----	**30-Mar-2023**	31-Mar-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**----**	----	----	**31-Mar-2023**	26-Apr-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	26-Apr-2023	✓	**31-Mar-2023**	26-Apr-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	26-Apr-2023	✓	**31-Mar-2023**	26-Apr-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**----**	----	----	**30-Mar-2023**	31-Mar-2023	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**----**	----	----	**31-Mar-2023**	26-Apr-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**03-Apr-2023**	13-May-2023	✓
Amber Glass Bottle - Unpreserved (EP068) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**03-Apr-2023**	13-May-2023	✓
Amber Glass Bottle - Unpreserved (EP068) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012_S, SBT-GW-1013_S, SBT-GW-1014_S, QC25_290323_KT, SBT-GW-4010, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S, SBT-GW-1014_S, SBT-GW-4010,	SBT-GW-1013_S, QC25_290323_KT, SBT-GW-4008	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S, SBT-GW-1014_S, SBT-GW-4010,	SBT-GW-1013_S, QC25_290323_KT, SBT-GW-4008	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012_S, SBT-GW-1014_S, SBT-GW-4010,	SBT-GW-1013_S, QC25_290323_KT, SBT-GW-4008	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1012_S, SBT-GW-1014_S, RB_290323_KT, SBT-GW-4010,	SBT-GW-1013_S, QC25_290323_KT, TB_290323_KT, SBT-GW-4008	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1012_S, SBT-GW-1014_S, RB_290323_KT, SBT-GW-4010,	SBT-GW-1013_S, QC25_290323_KT, TB_290323_KT, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1012_S, SBT-GW-1014_S, RB_290323_KT, SBT-GW-4010,	SBT-GW-1013_S, QC25_290323_KT, TB_290323_KT, SBT-GW-4008	**29-Mar-2023**	**03-Apr-2023**	05-Apr-2023	✓	**04-Apr-2023**	13-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1012_S, SBT-GW-1014_S, RB_290323_KT, SBT-GW-4010,	SBT-GW-1013_S, QC25_290323_KT, TB_290323_KT, SBT-GW-4008	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**31-Mar-2023**	12-Apr-2023	✓	**31-Mar-2023**	12-Apr-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
RB_290323_KT,	TB_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**31-Mar-2023**	25-Sep-2023	✓	**03-Apr-2023**	25-Sep-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
RB_290323_KT,	TB_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**31-Mar-2023**	25-Sep-2023	✓	**03-Apr-2023**	25-Sep-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
RB_290323_KT,	TB_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**31-Mar-2023**	25-Sep-2023	✓	**03-Apr-2023**	25-Sep-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
RB_290323_KT,	TB_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT-GW-1012_S,	SBT-GW-1013_S,	**29-Mar-2023**	**31-Mar-2023**	25-Sep-2023	✓	**03-Apr-2023**	25-Sep-2023	✓
SBT-GW-1014_S,	QC25_290323_KT,							
RB_290323_KT,	TB_290323_KT,							
SBT-GW-4010,	SBT-GW-4008							

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	4	30	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	6	45	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	13	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	10	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	4	30	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	45	8.89	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	6	40	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	45	**2.22**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	10	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: ~~jack.flanagan@tetratech.com~~

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: ~~Jack Flanagan~~ Katie Trevor — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
1	SBT-GW-1012_S	29/3/23	11:00	Water	Bottles	Std (5-day)		X												
2	SBT-GW-1013_S			Water	Bottles	Std (5-day)		X												
3	SBT-GW-1014_S			Water	Bottles	Std (5-day)		X												
4	QC25_290323_KT			Water	Bottles	Std (5-day)		X												
—	QC26_290323_KT			Water	Bottles	Std (5-day)	X													Forward to Eurofins
5	RB_290323_KT			Water	Bottles	Std (5-day)					X									
6	TB_290323_KT			Water	Bottles	Std (5-day)							X							
7	SBT-GW-4010			Water	Bottles	Std (5-day)		X												
8	SBT-GW-4008			Water	Bottles	Std (5-day)		X												
9	SBT-GW-1012_M			Water	Bottles	Std (5-day)														
10	SBT-GW-1012_D			Water	Bottles	Std (5-day)														
11	SBT-GW-1013_M			Water	Bottles	Std (5-day)														
12	SBT-GW-1013_D			Water	Bottles	Std (5-day)														
13	SBT-GW-1014_M			Water	Bottles	Std (5-day)														
14	SBT-GW-1014_D			Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

HOLD

RELINQUISHED BY		RECEIVED BY	
Name: Katie Trevor	Date: 29/3/23	Name: Josh	Date: 29/03/23
Coffey	Time: 15:30	Company: ALS	Time: 1530
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. R

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

HT

Environmental Division Sydney

Work Order Reference

ES2310447

Telephone : + 61-2-8784 8555

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: ~~jack.flanagan@tetratech.com~~

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: ~~Jack Flanagan~~ Katie Trevor — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

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1	SBT-GW-1012_S	29/3/23	11:00	Water	Bottles	Std (5-day)		X												
2	SBT-GW-1013_S			Water	Bottles	Std (5-day)		X												
3	SBT-GW-1014_S			Water	Bottles	Std (5-day)		X												
4	QC25_290323_KT			Water	Bottles	Std (5-day)		X												
—	QC26_290323_KT			Water	Bottles	Std (5-day)	X													Forward to Eurofins
5	RB_290323_KT			Water	Bottles	Std (5-day)					X									
6	TB_290323_KT			Water	Bottles	Std (5-day)							X							
7	SBT-GW-4010			Water	Bottles	Std (5-day)		X												
8	SBT-GW-4008			Water	Bottles	Std (5-day)		X												
9	SBT-GW-1012_M			Water	Bottles	Std (5-day)														
10	SBT-GW-1012_D			Water	Bottles	Std (5-day)														
11	SBT-GW-1013_M			Water	Bottles	Std (5-day)														
12	SBT-GW-1013_D			Water	Bottles	Std (5-day)														
13	SBT-GW-1014_M			Water	Bottles	Std (5-day)														
14	SBT-GW-1014_D			Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

HOLD

RELINQUISHED BY		RECEIVED BY	
Name: Katie Trevor	Date: 29/3/23	Name: Jack	Date: 29/03/23
Coffey	Time: 15:30	Company: ALS	Time: 1530
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. R

Container Type & Preservation Codes: P - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT

Subcon / Forward Lab / Split WO

Lab / Analysis: Eurofins - QC26_290323_KT

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

WO No:

Attached By PO / Internal Sheet:

Environmental Division Sydney

Work Order Reference

ES2310447

Telephone : +61-2-8784 8555

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

CERTIFICATE OF ANALYSIS

Work Order	: **ES2312354**	Page	: 1 of 18
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE292575-4 WSA-SBT	Date Samples Received	: 14-Apr-2023 16:00
Order number	: ----	Date Analysis Commenced	: 15-Apr-2023
C-O-C number	: ----	Issue Date	: 21-Apr-2023 11:48
Sampler	: Katie Trevor		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 12		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EK071G: LOR raised for Reactive P due to sample matrix
- It has been noted that Nitrite is greater than NOx, however this difference is within the limits of experimental variation.
- EK061G: LOR raised for TKN due to sample matrix.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.66	6.51	6.62	6.70	6.70
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	15800	22300	22200	16100	21900
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	10600	15400	16200	11600	14600
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	183	187	238	171	304
Total Alkalinity as CaCO3	----	1	mg/L	183	187	238	171	304
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	875	978	1010	879	1070
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	5040	7410	7400	5180	7240
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	94	150	182	100	162
Magnesium	7439-95-4	1	mg/L	357	632	606	398	516
Sodium	7440-23-5	1	mg/L	2550	3870	3560	2900	3390
Potassium	7440-09-7	1	mg/L	28	4	4	25	11
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.06	<0.01	0.03	<0.01	0.02
Arsenic	7440-38-2	0.001	mg/L	0.009	0.001	<0.001	0.020	0.007
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.076	0.147	0.119	0.056	0.106
Copper	7440-50-8	0.001	mg/L	0.001	<0.001	0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	1.02	2.44	2.66	0.833	1.57
Nickel	7440-02-0	0.001	mg/L	0.033	0.041	0.034	0.029	0.036
Zinc	7440-66-6	0.005	mg/L	0.026	0.024	0.027	0.025	0.012
Iron	7439-89-6	0.05	mg/L	13.8	22.8	5.58	9.50	21.1
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	180	432	73.9	149	39.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Cobalt	7440-48-4	0.001	mg/L	0.488	1.02	0.212	0.331	0.166
Manganese	7439-96-5	0.001	mg/L	8.90	29.4	4.99	7.17	3.49
Iron	7439-89-6	0.05	mg/L	559	1440	200	445	134
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.34	0.56	0.21	0.34	0.20
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.07	<0.01	<0.01	0.06	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.01	0.02	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.08	0.02	<0.01	0.03	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	12.2	<10.0	<5.0	27.5	<5.0
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	12.3	<10.0	<5.0	27.5	<5.0
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	4.86	10.9	4.68	11.5	2.55
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	164	233	234	168	232
ø Total Cations	----	0.01	meq/L	146	228	214	164	198
ø Ionic Balance	----	0.01	%	5.92	1.12	4.60	1.00	7.96
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	20	5	5	11	7
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP074G: Trihalomethanes - Continued								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	<2
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP075D: Nitrosamines - Continued								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP075G: Chlorinated Hydrocarbons - Continued								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	**0.08**	<0.05	<0.05	**0.08**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.08**	<0.01	<0.01	**0.08**	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**77.9**	**74.9**	**72.7**	**71.4**	**84.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1012-S	SBT-GW-1013-S	SBT-GW-1014-S	QC27_140423_KT	SBT-GW-1012-M
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00	14-Apr-2023 10:00
Compound	CAS Number	LOR	Unit	ES2312354-001	ES2312354-002	ES2312354-003	ES2312354-004	ES2312354-005
				Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued								
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	70.7	67.0	65.1	63.7	75.0
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	110	120	104	122	119
Toluene-D8	2037-26-5	5	%	112	118	102	125	120
4-Bromofluorobenzene	460-00-4	5	%	111	115	101	123	118
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	27.6	26.7	27.7	29.3	29.1
2-Chlorophenol-D4	93951-73-6	1.0	%	60.5	55.6	56.6	53.6	62.1
2.4.6-Tribromophenol	118-79-6	1.0	%	65.4	56.8	57.5	56.8	65.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	62.0	62.6	59.0	62.6	62.5
Anthracene-d10	1719-06-8	1.0	%	82.6	72.9	69.4	68.2	62.8
4-Terphenyl-d14	1718-51-0	1.0	%	80.4	74.5	62.8	68.0	87.2
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	37.6	39.4	38.1	37.5	39.0
Phenol-d6	13127-88-3	2	%	23.6	25.5	24.7	24.6	24.9
2-Chlorophenol-D4	93951-73-6	2	%	49.2	49.1	49.8	47.8	50.0
2.4.6-Tribromophenol	118-79-6	2	%	62.3	52.9	57.4	54.7	57.2
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	59.3	56.7	58.2	56.6	58.5
1.2-Dichlorobenzene-D4	2199-69-1	2	%	52.1	51.4	51.5	51.0	51.5
2-Fluorobiphenyl	321-60-8	2	%	63.4	59.0	61.9	63.8	60.6
Anthracene-d10	1719-06-8	2	%	73.0	63.2	68.3	66.5	74.2
4-Terphenyl-d14	1718-51-0	2	%	75.1	65.5	72.2	68.3	78.4
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	117	134	129	125	133
Toluene-D8	2037-26-5	2	%	108	123	118	127	116
4-Bromofluorobenzene	460-00-4	2	%	125	136	131	136	128
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	108	104	111	108	117
13C8-PFOA	----	0.02	%	116	114	115	116	116

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_140423_KT	RB_140423_KT	----	----	----
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2312354-011	ES2312354-012	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L	<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB_140423_KT	RB_140423_KT	----	----	----
			Sampling date / time	14-Apr-2023 10:00	14-Apr-2023 10:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2312354-011	ES2312354-012	--------	--------	--------
				Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**130**	**108**	----	----	----
Toluene-D8	2037-26-5	2	%	**95.7**	**97.3**	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	**101**	**97.7**	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**106**	**114**	----	----	----
13C8-PFOA	----	0.02	%	**118**	**119**	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2312354**	Page	: 1 of 25
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE292575-4 WSA-SBT	Date Samples Received	: 14-Apr-2023
Order number	: ----	Date Analysis Commenced	: 15-Apr-2023
C-O-C number	: ----	Issue Date	: 21-Apr-2023
Sampler	: Katie Trevor		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 12		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4992304)									
ES2312392-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.25	8.27	0.2	0% - 20%
ES2312354-001	SBT-GW-1012-S	EA005-P: pH Value	----	0.01	pH Unit	6.66	6.65	0.2	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 4992298)									
ES2312392-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	13800	14000	1.4	0% - 20%
ES2312116-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	49	48	3.2	0% - 20%
ES2312315-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	157	156	0.7	0% - 20%
ES2312315-006	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	53800	54300	0.8	0% - 20%
ES2312354-001	SBT-GW-1012-S	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	15800	15800	0.1	0% - 20%
ES2311548-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	659	661	0.2	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4998630)									
ES2312354-001	SBT-GW-1012-S	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	10600	10800	1.8	0% - 20%
ES2312451-010	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	374	353	5.6	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 4992302)									
ES2312337-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	6	4	44.8	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	6	4	44.8	No Limit
ES2312354-001	SBT-GW-1012-S	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	183	173	5.2	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	183	173	5.2	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4992583)									
ES2312354-005	SBT-GW-1012-M	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1070	1050	1.3	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 4992583) - continued									
WN2304744-008	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	85	84	1.5	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4992584)									
ES2312354-005	SBT-GW-1012-M	ED045G: Chloride	16887-00-6	1	mg/L	7240	7240	0.1	0% - 20%
WN2304744-008	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	653	659	0.9	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 4995575)									
ES2312299-013	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	76	77	2.4	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	25	25	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	367	373	1.4	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	64	65	2.7	0% - 20%
WN2304690-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	10	10	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	12	12	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	63	63	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4995571)									
ES2312271-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.039	0.040	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.04	0.04	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2312126-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.020	0.019	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.14	0.14	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4995576)									
ES2312354-002	SBT-GW-1013-S	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4995576) - continued									
ES2312354-002	SBT-GW-1013-S	EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.147	0.149	1.3	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	2.44	2.39	1.9	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.041	0.042	2.7	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.024	0.035	36.3	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	22.8	22.2	2.9	0% - 20%
WN2304690-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.067	0.067	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.04	0.04	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.49	0.49	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4994811)									
ES2312221-014	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.054	0.053	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.003	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.27	1.11	13.2	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.85	1.74	6.2	0% - 20%
ES2312354-004	QC27_140423_KT	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0011	0.0012	0.0	0% - 50%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.169	0.167	1.1	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.280	0.280	0.0	0% - 20%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.331	0.327	1.0	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.654	0.660	0.9	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.222	0.223	0.6	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	7.17	7.21	0.6	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.354	0.352	0.7	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4994811) - continued									
ES2312354-004	QC27_140423_KT	EG020A-T: Zinc	7440-66-6	0.005	mg/L	1.24	1.23	0.3	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	149	147	1.3	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	445	447	0.4	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 4995574)									
ES2312143-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2312299-013	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4998859)									
ES2312125-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2312362-022	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4996911)									
ES2312138-006	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.42	0.42	0.0	0% - 20%
ES2312299-004	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.66	0.72	7.8	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4992581)									
ES2312261-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2312319-004	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4992585)									
ES2312354-005	SBT-GW-1012-M	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
WN2304744-008	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4996912)									
ES2312138-006	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.14	0.14	0.0	0% - 50%
ES2312299-004	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.20	0.20	0.0	0% - 50%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4996913)									
ES2312354-005	SBT-GW-1012-M	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
WN2304682-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.40	0.39	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4996908)									
ES2312299-008	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	73.1	64.5	12.5	0% - 50%
ES2312143-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.8	0.4	69.9	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4996907)									
ES2312299-004	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	14.8	15.0	1.5	0% - 20%
ES2312143-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4992582)									
ES2312354-005	SBT-GW-1012-M	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.10	<0.10	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 4992873)									
ES2312267-008	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	10	10	0.0	No Limit
ME2300714-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	3	5	46.8	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4992382)									
ES2312299-010	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4992382) - continued									
ES2312299-010	Anonymous	EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 4992382)									
ES2312299-010	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 4992382)									
ES2312299-010	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074D: Fumigants (QC Lot: 4992382)									
ES2312299-010	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4992382)									
ES2312299-010	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4992382) - continued									
ES2312354-004	QC27_140423_KT	EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4992382)									
ES2312299-010	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4992382)									
ES2312299-010	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074G: Trihalomethanes (QC Lot: 4992382) - continued									
ES2312299-010	Anonymous	EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4992381)									
ES2312299-010	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4993861)									
WN2304746-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	20	0.0	No Limit
WN2304679-003	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4992381)									
ES2312299-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4993861)									
WN2304746-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	20	0.0	No Limit
WN2304679-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4992381)									
ES2312299-010	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2312354-004	QC27_140423_KT	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP080: BTEXN (QC Lot: 4993861)									
WN2304746-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	3	3	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 4993861) - continued									
WN2304746-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
WN2304679-003	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4992304)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.5	98.8	101
				----	7 pH Unit	99.7	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 4992298)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	103	89.9	110
				<1	2100 µS/cm	97.9	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4998630)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	100	87.0	109
				<10	293 mg/L	105	75.2	126
				<10	2340 mg/L	104	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 4992302)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	101	81.0	111
				----	50 mg/L	113	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4992583)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	105	82.0	122
				<1	500 mg/L	103	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 4992584)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	101	80.9	127
				<1	1000 mg/L	101	80.9	127
ED093F: Dissolved Major Cations (QCLot: 4995575)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	107	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	103	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	104	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	103	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 4995571)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	93.1	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.7	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.4	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.2	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	95.5	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.7	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.3	83.0	111

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4995571) - continued								
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.5	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.7	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	95.6	82.0	112
EG020F: Dissolved Metals by ICP-MS (QCLot: 4995576)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	92.4	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.6	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.4	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.8	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	95.4	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.7	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.1	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.0	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.3	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.9	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	97.3	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 4994811)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	97.9	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.3	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.5	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	101	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.7	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.4	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	104	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4995574)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.5	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4998859)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.6	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4996911)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	98.5	90.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4992581)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.2	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4992585)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	105	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4996912)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	99.4	91.0	113
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4996913)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	97.4	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4996908)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	101	69.0	101
				<0.1	1 mg/L	92.6	70.0	118
				<0.1	5 mg/L	110	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4996907)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	89.6	71.3	126
				<0.01	0.442 mg/L	98.0	71.3	126
				<0.01	1 mg/L	99.6	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4992582)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	88.4	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 4992873)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	94.9	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 4993825)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	85.8	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	81.8	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	95.8	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	89.3	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	97.4	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	86.1	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.2	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	91.5	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	92.4	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	92.6	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	89.3	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	89.6	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	90.2	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	101	65.2	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4993825) - continued								
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	90.6	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	91.2	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	92.9	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	103	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	97.9	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	98.6	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	101	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4993825)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	81.4	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	81.9	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	25.2	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	104	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	93.1	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	91.8	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	90.8	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	98.8	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	89.3	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	91.8	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	88.3	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	90.0	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	96.2	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	92.6	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	101	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	93.1	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	90.4	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	106	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	106	51.6	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4992382)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	106	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	112	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	107	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	108	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	103	73.0	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4992382) - continued								
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	106	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	109	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	109	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	110	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	110	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	104	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	112	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	108	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	105	65.0	123
EP074B: Oxygenated Compounds (QCLot: 4992382)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	109	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	108	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	111	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	111	65.0	137
EP074C: Sulfonated Compounds (QCLot: 4992382)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	102	72.8	127
EP074D: Fumigants (QCLot: 4992382)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	110	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	104	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	99.1	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	102	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	110	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4992382)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	94.8	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	102	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	99.8	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	106	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	102	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	110	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	104	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	85.5	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	103	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	105	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	108	77.0	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4992382) - continued								
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	109	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	110	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	104	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	102	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	108	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	102	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	112	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	112	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	104	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	106	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	107	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	109	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	108	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	108	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	107	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	105	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 4992382)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	107	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	107	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	110	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	107	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	103	67.0	123
EP074G: Trihalomethanes (QCLot: 4992382)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	108	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	104	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	100	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	104	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4993823)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	67.7	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	69.6	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	72.7	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	79.4	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	90.9	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	97.5	64.3	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4993823) - continued								
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	97.8	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	98.7	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	102	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	90.3	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	96.4	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	91.1	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	97.4	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	82.1	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	90.4	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	88.9	59.1	118
EP075A: Phenolic Compounds (QCLot: 4993822)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	44.1	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	85.9	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	79.6	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	75.4	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	97.5	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	91.6	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	95.3	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	89.8	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	94.3	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	96.0	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	99.0	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	88.3	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4993822)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	86.6	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	90.6	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	91.1	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	93.7	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	80.6	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	79.2	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	99.0	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	97.5	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	102	64.9	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 4993822) - continued								
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	101	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	108	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	102	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	102	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	# 114	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	93.4	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	# 115	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	109	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	107	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	108	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	106	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 4993822)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	102	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	86.8	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	101	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	98.1	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	116	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	114	62.1	115
EP075D: Nitrosamines (QCLot: 4993822)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	71.6	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	91.4	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	76.8	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	73.6	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	98.7	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	97.6	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	81.2	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	85.6	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	# 21.3	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 4993822)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	59.9	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	94.6	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	92.1	68.3	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075E: Nitroaromatics and Ketones (QCLot: 4993822) - continued								
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	103	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	100	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	89.1	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	99.0	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	# 113	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	85.1	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	76.6	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	80.0	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	76.6	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	88.5	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	85.6	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	97.9	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	100	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	108	57.7	110
EP075F: Haloethers (QCLot: 4993822)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	94.7	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	100	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	81.9	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	88.9	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 4993822)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	88.1	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	88.5	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	91.4	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	87.6	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	89.2	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	83.8	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	83.8	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	93.4	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	83.8	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	93.8	65.7	110
EP075H: Anilines and Benzidines (QCLot: 4993822)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	81.9	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	91.4	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	95.4	60.9	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075H: Anilines and Benzidines (QCLot: 4993822) - continued								
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	89.0	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	82.5	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	79.5	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	101	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	105	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 4993822)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	82.1	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	77.9	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	80.5	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	100	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	# 111	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	108	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	# 125	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	100	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	101	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	106	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	106	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	98.9	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	105	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	110	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	104	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 4993822)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	104	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	80.8	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	94.0	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	115	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	112	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	# 116	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	104	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	99.3	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	107	50.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075J: Organophosphorus Pesticides (QCLot: 4993822) - continued								
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	99.8	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	112	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4992381)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	106	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4993824)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	86.2	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	75.8	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	91.9	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4993861)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	99.2	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4992381)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	108	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4993824)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	69.0	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	77.0	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	81.3	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4993861)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	102	75.0	127
EP080: BTEXN (QCLot: 4992381)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	91.4	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.4	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	103	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	103	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	107	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	108	75.5	124
EP080: BTEXN (QCLot: 4993861)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	99.3	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	104	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	101	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	98.9	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	101	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	105	75.5	124
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4995765)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4995765) - continued								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	75.2	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	99.4	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	109	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4995765)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	93.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	81.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	92.5	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	81.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.5	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4995765)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	86.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	99.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	116	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	75.5	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 4992583)							
ES2312354-005	SBT-GW-1012-M	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 4992584)							
ES2312354-005	SBT-GW-1012-M	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4995571)							
ES2312126-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	94.0	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	94.1	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	97.3	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	93.9	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	96.6	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	92.9	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	95.9	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4995571) - continued							
ES2312126-002	Anonymous	EG020A-F: Nickel	7440-02-0	1 mg/L	94.3	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	95.2	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 4995576)							
ES2312354-003	SBT-GW-1014-S	EG020A-F: Arsenic	7440-38-2	1 mg/L	103	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	88.0	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	88.6	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	95.6	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	96.1	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	88.9	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	80.6	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	93.7	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	93.6	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4994811)							
ES2312221-015	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	101	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	104	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	106	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	109	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	104	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	107	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	106	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	99.9	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4995574)							
ES2312143-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	90.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4998859)							
ES2312125-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	89.3	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4996911)							
ES2312138-006	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	99.2	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4992581)							
ES2312261-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	113	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4992585)							
ES2312354-005	SBT-GW-1012-M	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	113	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4996912)							
ES2312138-006	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	86.1	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4996913)							
ES2312354-005	SBT-GW-1012-M	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	98.8	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4996908)							
ES2312143-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	112	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4996907)							
ES2312143-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	104	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4992582)							
ES2312354-005	SBT-GW-1012-M	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	104	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4992873)							
ES2312354-001	SBT-GW-1012-S	EP005: Total Organic Carbon	----	100 mg/L	107	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4992382)							
ES2312299-010	Anonymous	EP074: Benzene	71-43-2	25 µg/L	98.8	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	97.4	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4992382)							
ES2312299-010	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	88.8	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	96.4	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4992382)							
ES2312299-010	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	101	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4992381)							
ES2312299-010	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	107	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4993861)							
WN2304746-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	125	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4992381)							
ES2312299-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	110	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4993861)							
WN2304746-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	123	70.0	130
EP080: BTEXN (QCLot: 4992381)							
ES2312299-010	Anonymous	EP080: Benzene	71-43-2	25 µg/L	76.6	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	89.3	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	97.3	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	94.9	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	105	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	106	70.0	130
EP080: BTEXN (QCLot: 4993861)							
WN2304746-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	103	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	105	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	104	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 4993861) - continued							
WN2304746-001	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	103	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	104	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	96.8	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2312354**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE292575-4 WSA-SBT	Date Samples Received	: 14-Apr-2023
Site	: ----	Issue Date	: 21-Apr-2023
Sampler	: Katie Trevor	No. of samples received	: 12
Order number	: ----	No. of samples analysed	: 7

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075B: Polynuclear Aromatic Hydrocarbons	QC-4993822-002	----	**Benzo(b+j) & Benzo(k)fluoranthene**	205-99-2 207-08-9	114 %	60.1-111%	**Recovery greater than upper control limit**
EP075B: Polynuclear Aromatic Hydrocarbons	QC-4993822-002	----	**Benzo(a)pyrene**	50-32-8	115 %	59.2-112%	**Recovery greater than upper control limit**
EP075D: Nitrosamines	QC-4993822-002	----	**Methapyrilene**	91-80-5	21.3 %	23.3-125%	**Recovery less than lower control limit**
EP075E: Nitroaromatics and Ketones	QC-4993822-002	----	**4-Nitroquinoline-N-oxide**	56-57-5	113 %	40.0-96.0%	**Recovery greater than upper control limit**
EP075I: Organochlorine Pesticides	QC-4993822-002	----	**Heptachlor**	76-44-8	111 %	57.9-108%	**Recovery greater than upper control limit**
EP075I: Organochlorine Pesticides	QC-4993822-002	----	**Heptachlor epoxide**	1024-57-3	125 %	50.0-118%	**Recovery greater than upper control limit**
EP075J: Organophosphorus Pesticides	QC-4993822-002	----	**Fenthion**	55-38-9	116 %	57.0-115%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2312354--005	SBT-GW-1012-M	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2312354--005	SBT-GW-1012-M	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068T: Organophosphorus Pesticide Surrogate	ES2312354-003	SBT-GW-1014-S	**DEF**	78-48-8	65.1 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2312354-004	QC27_140423_KT	**DEF**	78-48-8	63.7 %	66.5-111 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA005P: pH by PC Titrator						

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA005P: pH by PC Titrator - Analysis Holding Time Compliance						
Clear Plastic Bottle - Natural						
SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	----	----	----	15-Apr-2023	14-Apr-2023	**1**
EK057G: Nitrite as N by Discrete Analyser						
Clear Plastic Bottle - Natural						
SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	----	----	----	17-Apr-2023	16-Apr-2023	**1**
EK071G: Reactive Phosphorus as P by discrete analyser						
Clear Plastic Bottle - Natural						
SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	----	----	----	17-Apr-2023	16-Apr-2023	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
	0				
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	17	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)					
Conductivity by Auto Titrator	4	51	7.84	8.33	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	17	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	**----**	**15-Apr-2023**	14-Apr-2023	✗
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	**----**	**15-Apr-2023**	12-May-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	**----**	**18-Apr-2023**	21-Apr-2023	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	**----**	**15-Apr-2023**	28-Apr-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	**----**	**17-Apr-2023**	12-May-2023	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	**----**	**17-Apr-2023**	12-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	----	**17-Apr-2023**	12-May-2023	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	----	**17-Apr-2023**	11-Oct-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M, TB_140423_KT, RB_140423_KT	**14-Apr-2023**	**17-Apr-2023**	11-Oct-2023	✓	**17-Apr-2023**	11-Oct-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	----	**19-Apr-2023**	12-May-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) TB_140423_KT, RB_140423_KT	**14-Apr-2023**	**----**	----	----	**20-Apr-2023**	12-May-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	----	**19-Apr-2023**	12-May-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	----	**17-Apr-2023**	16-Apr-2023	×
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**----**	----	----	**19-Apr-2023**	12-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	12-May-2023	✓	**19-Apr-2023**	12-May-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	12-May-2023	✓	**19-Apr-2023**	12-May-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**----**	----	----	**17-Apr-2023**	16-Apr-2023	✗
EP005: Total Organic Carbon (TOC)								
Amber TOC Vial - Sulfuric Acid (EP005)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**----**	----	----	**18-Apr-2023**	12-May-2023	✓
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**20-Apr-2023**	28-May-2023	✓
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**20-Apr-2023**	28-May-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP074)								
QC27_140423_KT		**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1012-S, SBT-GW-1014-S,	SBT-GW-1013-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓
EP074B: Oxygenated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
QC27_140423_KT		**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)								
SBT-GW-1012-S, SBT-GW-1014-S,	SBT-GW-1013-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) QC27_140423_KT	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) QC27_140423_KT	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) QC27_140423_KT	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) QC27_140423_KT	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) QC27_140423_KT	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SBT-GW-1012-S	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**20-Apr-2023**	28-May-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1012-S, SBT-GW-1013-S, SBT-GW-1014-S, QC27_140423_KT, SBT-GW-1012-M	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M	SBT-GW-1013-S, QC27_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071) SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M, RB_140423_KT	SBT-GW-1013-S, QC27_140423_KT, TB_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1013-S, QC27_140423_KT,	SBT-GW-1014-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1012-S		**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) TB_140423_KT,	RB_140423_KT	**14-Apr-2023**	**18-Apr-2023**	28-Apr-2023	✓	**19-Apr-2023**	28-Apr-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071) SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M, RB_140423_KT	SBT-GW-1013-S, QC27_140423_KT, TB_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	21-Apr-2023	✓	**19-Apr-2023**	28-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1013-S, QC27_140423_KT,	SBT-GW-1014-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1012-S		**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) TB_140423_KT,	RB_140423_KT	**14-Apr-2023**	**18-Apr-2023**	28-Apr-2023	✓	**19-Apr-2023**	28-Apr-2023	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1013-S, QC27_140423_KT,	SBT-GW-1014-S, SBT-GW-1012-M	**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**15-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1012-S		**14-Apr-2023**	**15-Apr-2023**	28-Apr-2023	✓	**17-Apr-2023**	28-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) TB_140423_KT,	RB_140423_KT	**14-Apr-2023**	**18-Apr-2023**	28-Apr-2023	✓	**19-Apr-2023**	28-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M, RB_140423_KT	SBT-GW-1013-S, QC27_140423_KT, TB_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	11-Oct-2023	✓	**19-Apr-2023**	11-Oct-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M, RB_140423_KT	SBT-GW-1013-S, QC27_140423_KT, TB_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	11-Oct-2023	✓	**19-Apr-2023**	11-Oct-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M, RB_140423_KT	SBT-GW-1013-S, QC27_140423_KT, TB_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	11-Oct-2023	✓	**19-Apr-2023**	11-Oct-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT-GW-1012-S, SBT-GW-1014-S, SBT-GW-1012-M, RB_140423_KT	SBT-GW-1013-S, QC27_140423_KT, TB_140423_KT,	**14-Apr-2023**	**18-Apr-2023**	11-Oct-2023	✓	**19-Apr-2023**	11-Oct-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	6	51	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	34	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	31	12.90	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	17	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	5	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	32	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	51	7.84	8.33	×	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	51	**1.96**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	17	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: ~~jack.flanagan@tetratech.com~~

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: ~~Jack Flanagan~~ Katie Trevor — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
1	SBT-GW-1012-S	14/4/23	10:00	Water	Bottles	Std (5-day)		X												
2	SBT-GW-1013_S	↓	↓	Water	Bottles	Std (5-day)		X												
3	SBT-GW-1019-S			Water	Bottles	Std (5-day)		X												
4	QC27_140423_KT			Water	Bottles	Std (5-day)		X												
5	QC28-140423-KT			Water	Bottles	Std (5-day)	X													Forward to Eurofins
6	SBT-GW-1012-M			Water	Bottles	Std (5-day)														
7	SBT-GW-1012_D			Water	Bottles	Std (5-day)														
8	SBT-GW-1013_M			Water	Bottles	Std (5-day)														
9	SBT-GW-1013_D			Water	Bottles	Std (5-day)														
10	SBT-GW-1014-M			Water	Bottles	Std (5-day)														
11	SBT-GW-1019-D			Water	Bottles	Std (5-day)														
12	TB_140423-KT			Water	Bottles	Std (5-day)														
13	RB-140423_KT			Water	Bottles	Std (5-day)							X							
				Water	Bottles	Std (5-day)					X									
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

HOLD

RELINQUISHED BY

Name: Katie Trevor — Date: 14/4/23

Coffey — Time: 15:00

Name: — Date: →

Company: — Time:

RECEIVED BY

Name: Thank K — Date: 14/4/23

Company: ALS — Time: 16:00

Name: — Date:

Company: — Time:

Sample Receipt Advice: (Lab Use Only)

All Samp

All Docu

Samples

Lab. Ref

Environmental Division Sydney

Work Order Reference

ES2312354

Telephone : - 61-2-8784 8555

HT

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: ~~jack.flanagan@tetratech.com~~

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: ~~Jack Flanagan~~ Katie Trevor — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
1	SBT-GW-1012-S	14/4/23	10:00	Water	Bottles	Std (5-day)		X												
2	SBT-GW-1013_S			Water	Bottles	Std (5-day)		X												
3	SBT-GW-1014_S			Water	Bottles	Std (5-day)		X												
4	QC27_140423_KT			Water	Bottles	Std (5-day)		X												
~~6~~	QC28_140423_KT			Water	Bottles	Std (5-day)	X													Forward to Eurofins
5	SBT-GW-1012-M			Water	Bottles	Std (5-day)														
6	SBT-GW-1012_D			Water	Bottles	Std (5-day)														
7	SBT-GW-1013_M			Water	Bottles	Std (5-day)														
8	SBT-GW-1013_D			Water	Bottles	Std (5-day)														
9	SBT-GW-1014-M			Water	Bottles	Std (5-day)														
10	SBT-GW-1014_D			Water	Bottles	Std (5-day)														
11	TB_140423_KT			Water	Bottles	Std (5-day)														
12	RB_140423_KT			Water	Bottles	Std (5-day)							X							
				Water	Bottles	Std (5-day)					X									
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

HOLD

RELINQUISHED BY		RECEIVED BY	
Name: Katie Trevor	Date: 14/4/23	Name: Thank K	Date: 14/4/23
Coffey	Time: 15:00	Company: ALS	Time: 16:00
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Sampl... Received in Good Condition ☐

All Docu...

Samples...

Lab. Ref...

Environmental Division Sydney

Work Order Reference

ES2312354

Telephone: + 61-2-8784 8555

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Forward Lab / Split WO

Lab / Analysis: QC28_140423_KT (EUROFINS)

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

WO No: ES2312354

Attached By PO / Internal Sheet:

HT

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

CERTIFICATE OF ANALYSIS

Work Order	: **ES2312803**	Page	: 1 of 30
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MS EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE29257-4 WSA	Date Samples Received	: 19-Apr-2023 14:10
Order number	: ----	Date Analysis Commenced	: 20-Apr-2023
C-O-C number	: ----	Issue Date	: 28-Apr-2023 08:16
Sampler	: Ben Everingham		
Site	:		
Quote number	: EN/222		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: Positive result for sample ES2312803-#006 has been confirmed by re-digestion and reanalysis.
- EG020: It is recognised that total concentration is less than dissolved for some metal analytes. However, the difference is within experimental variation of the methods.
- EG020: Total results for samples ES2312803-#002-#005 confirmed by re-digestion and reanalysis.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EN055: Ionic Balance out of acceptable limits for sample ES2312803-#003 due to analytes not quantified in this report.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.82	7.28	5.78	5.94	7.24
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	2310	2500	24600	17400	3790
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	1580	1630	18600	12300	2460
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	141	103	28	24	124
Total Alkalinity as CaCO3	----	1	mg/L	141	103	28	24	124
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	622	85	2420	1870	133
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	224	754	8640	5870	1090
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	47	40	34	32	47
Magnesium	7439-95-4	1	mg/L	15	59	732	687	99
Sodium	7440-23-5	1	mg/L	384	306	3160	3000	460
Potassium	7440-09-7	1	mg/L	17	4	19	18	6
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.11	0.37	0.32	0.13
Arsenic	7440-38-2	0.001	mg/L	0.017	0.002	0.002	0.002	0.002
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0001	0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.003	0.870	0.855	0.003
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.009	0.011	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	0.035	0.649	3.56	3.36	0.655
Nickel	7440-02-0	0.001	mg/L	0.011	0.004	0.409	0.395	0.004
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.844	0.806	<0.005
Iron	7439-89-6	0.05	mg/L	0.31	1.77	<0.05	<0.05	1.76
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.40	8.99	0.80	5.06	9.13

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Arsenic	7440-38-2	0.001	mg/L	0.012	0.004	<0.001	0.003	0.005
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0002	0.0004	<0.0001	0.0002
Chromium	7440-47-3	0.001	mg/L	0.002	0.011	0.001	0.029	0.011
Cobalt	7440-48-4	0.001	mg/L	0.002	0.012	1.22	0.859	0.014
Copper	7440-50-8	0.001	mg/L	<0.001	0.019	<0.001	0.029	0.022
Lead	7439-92-1	0.001	mg/L	<0.001	0.010	<0.001	0.011	0.010
Manganese	7439-96-5	0.001	mg/L	0.032	0.955	9.92	4.64	0.906
Nickel	7440-02-0	0.001	mg/L	0.023	0.027	0.573	0.412	0.019
Zinc	7440-66-6	0.005	mg/L	0.016	0.079	0.826	0.809	0.086
Iron	7439-89-6	0.05	mg/L	2.41	12.0	2.32	18.9	11.9
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	6.94	1.02	0.86	0.64	0.76
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.21	0.65	0.08	0.17
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.21	0.65	0.08	0.17
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	10.2	5.9	1.2	2.2	7.0
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	10.2	6.1	1.8	2.3	7.2
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.13	1.28	0.04	0.61	1.84
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.06	0.50	<0.01	<0.01	0.37
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	22.1	25.1	295	205	36.0
ø Total Cations	----	0.01	meq/L	----	20.7	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued								
ø Total Cations	----	0.01	meq/L	20.7	----	200	189	30.6
ø Ionic Balance	----	0.01	%	----	9.61	----	----	----
ø Ionic Balance	----	0.01	%	3.20	----	19.2	4.04	8.01
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	27	26	7	8	26
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2
2-Chlorophenol	95-57-8	2	µg/L	<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L	<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	<4	<4	<4	<4

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued								
2-Nitrophenol	88-75-5	2	µg/L	<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L	<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L	<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L	<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L	<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L	<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L	<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L	<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L	<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L	<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	<2	<2	<2
3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L	<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	<2	<2	<2
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP075C: Phthalate Esters - Continued								
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
^ **C10 - C36 Fraction (sum)**	----	50	µg/L	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.10**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.07**	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.13**	<0.01	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.1**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.26**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.69**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.11**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.26**	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	**0.05**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.20**	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	**1.77**	<0.01	<0.01	<0.01	<0.01
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**67.8**	**60.6**	**70.8**	**73.4**	**51.6**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	**84.2**	**67.6**	**67.5**	**70.0**	**52.5**
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**110**	**112**	**112**	**111**	**115**
Toluene-D8	2037-26-5	5	%	**115**	**118**	**114**	**113**	**115**
4-Bromofluorobenzene	460-00-4	5	%	**115**	**120**	**116**	**115**	**117**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**28.1**	**15.1**	**28.7**	**27.1**	**17.1**
2-Chlorophenol-D4	93951-73-6	1.0	%	**54.4**	**28.4**	**59.8**	**56.5**	**33.9**
2.4.6-Tribromophenol	118-79-6	1.0	%	**65.9**	**35.2**	**56.3**	**46.5**	**35.7**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	**60.8**	**30.6**	**63.5**	**63.4**	**38.0**
Anthracene-d10	1719-06-8	1.0	%	**54.5**	**29.8**	**59.8**	**53.3**	**31.1**
4-Terphenyl-d14	1718-51-0	1.0	%	**84.1**	**38.8**	**81.5**	**80.3**	**43.9**
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	**27.8**	**14.7**	**30.1**	**29.2**	**19.7**
Phenol-d6	13127-88-3	2	%	**18.7**	**12.0**	**19.0**	**18.9**	**12.1**
2-Chlorophenol-D4	93951-73-6	2	%	**40.9**	**20.9**	**46.8**	**46.5**	**27.0**
2.4.6-Tribromophenol	118-79-6	2	%	**51.9**	**23.8**	**49.3**	**44.0**	**27.4**
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	**54.7**	**31.1**	**56.4**	**57.3**	**32.1**
1.2-Dichlorobenzene-D4	2199-69-1	2	%	**41.9**	**19.4**	**43.8**	**45.3**	**25.5**
2-Fluorobiphenyl	321-60-8	2	%	**56.5**	**27.3**	**57.4**	**60.3**	**32.4**
Anthracene-d10	1719-06-8	2	%	**63.7**	**30.0**	**61.4**	**63.2**	**35.3**
4-Terphenyl-d14	1718-51-0	2	%	**64.9**	**31.3**	**71.4**	**77.3**	**37.4**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**122**	**124**	**124**	**122**	**127**
Toluene-D8	2037-26-5	2	%	**130**	**132**	**125**	**123**	**127**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1021	SMGW-BH-B120	SMGW-BH-B319	DUP01	TRIP01
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2312803-001	ES2312803-002	ES2312803-003	ES2312803-004	ES2312803-005
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued								
4-Bromofluorobenzene	460-00-4	2	%	**124**	**128**	**124**	**122**	**124**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**102**	**95.3**	**103**	**104**	**96.6**
13C8-PFOA	----	0.02	%	**86.8**	**82.9**	**84.6**	**80.9**	**82.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.12**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	<1	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	<10	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	<1	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	<1	----	----	----	----
Magnesium	7439-95-4	1	mg/L	<1	----	----	----	----
Sodium	7440-23-5	1	mg/L	<1	----	----	----	----
Potassium	7440-09-7	1	mg/L	<1	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.05**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	<0.1	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.01**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	<0.01	----	----	----	----
ø Total Cations	----	0.01	meq/L	<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	5	µg/L	<5	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	----	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	----	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	----	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP074D: Fumigants - Continued								
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP074F: Halogenated Aromatic Compounds - Continued								
4-Chlorotoluene	106-43-4	5	µg/L	<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	----	----	----	----
Bromoform	75-25-2	5	µg/L	<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP075A: Phenolic Compounds - Continued								
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	----	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	----	----	----	----
Fluorene	86-73-7	2	µg/L	<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	----	----	----	----
Anthracene	120-12-7	2	µg/L	<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	----	----	----	----
Pyrene	129-00-0	2	µg/L	<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	----	----	----	----
Chrysene	218-01-9	2	µg/L	<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP075C: Phthalate Esters - Continued								
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	----	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	----	----	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	----	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	----	----	----	----
Isophorone	78-59-1	2	µg/L	<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	----	----	----	----
Azobenzene	103-33-3	2	µg/L	<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	----	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP075F: Haloethers - Continued								
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	----	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	----	----	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	----	----	----	----
Carbazole	86-74-8	2	µg/L	<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	----	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	----	----	----	----
Aldrin	309-00-2	2	µg/L	<2	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	----	----	----	----
Endrin	72-20-8	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP075I: Organochlorine Pesticides - Continued								
beta-Endosulfan	33213-65-9	2	µg/L	<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	----	----	----	----
Diazinon	333-41-5	2	µg/L	<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	----	----
Malathion	121-75-5	2	µg/L	<2	----	----	----	----
Fenthion	55-38-9	2	µg/L	<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	----	----	----	----
Ethion	563-12-2	2	µg/L	<2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ Total Xylenes	----	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----
EP231P: PFAS Sums								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP231P: PFAS Sums - Continued								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	65.9	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	66.3	----	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	117	----	----	----	----
Toluene-D8	2037-26-5	5	%	121	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	118	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	23.5	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	32.7	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	23.0	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	56.7	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	51.9	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	73.5	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	11.7	----	----	----	----
Phenol-d6	13127-88-3	2	%	16.4	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	26.0	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	20.2	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	51.7	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	40.4	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	53.4	----	----	----	----
Anthracene-d10	1719-06-8	2	%	60.1	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	62.8	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	114	----	----	----	----
Toluene-D8	2037-26-5	2	%	119	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RIN	----	----	----	----
			Sampling date / time	18-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2312803-006	--------	--------	--------	--------
				Result	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued								
4-Bromofluorobenzene	460-00-4	2	%	117	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	101	----	----	----	----
13C8-PFOA	----	0.02	%	84.9	----	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2312803**	Page	: 1 of 23
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MS EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE29257-4 WSA	Date Samples Received	: 19-Apr-2023
Order number	: ----	Date Analysis Commenced	: 20-Apr-2023
C-O-C number	: ----	Issue Date	: 28-Apr-2023
Sampler	: Ben Everingham		
Site	:		
Quote number	: EN/222		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 5006731)									
ES2312803-001	SBT-GW-1021	EA005-P: pH Value	----	0.01	pH Unit	7.82	7.86	0.5	0% - 20%
ES2312828-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.68	7.73	0.6	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 5006730)									
ES2312803-001	SBT-GW-1021	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	2310	2280	1.4	0% - 20%
ES2312828-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	342	340	0.6	0% - 20%
ES2313195-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	363	362	0.3	0% - 20%
ES2313195-011	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	377	379	0.6	0% - 20%
ES2313195-022	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	357	355	0.6	0% - 20%
ES2313195-031	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	358	359	0.3	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5005021)									
ES2312594-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	322	312	3.5	0% - 20%
ES2312673-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	159	161	1.4	0% - 50%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5005022)									
ES2312803-003	SMGW-BH-B319	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	18600	18700	0.2	0% - 20%
ES2312912-006	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	148	148	0.7	0% - 50%
ED037P: Alkalinity by PC Titrator (QC Lot: 5006732)									
ES2312803-001	SBT-GW-1021	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	141	146	3.8	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	141	146	3.8	0% - 20%
ES2312828-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	136	135	0.0	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED037P: Alkalinity by PC Titrator (QC Lot: 5006732) - continued									
ES2312828-004	Anonymous	ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	136	135	0.0	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 5001832)									
ES2312669-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 5001833)									
ES2312669-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	3	3	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 5007638)									
ES2312803-001	SBT-GW-1021	ED093F: Calcium	7440-70-2	1	mg/L	47	49	5.6	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	15	16	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	384	410	6.7	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	17	18	7.2	0% - 50%
ES2312879-005	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	14	14	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	7	7	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	30	30	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5007637)									
ES2312803-001	SBT-GW-1021	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.017	0.017	0.0	0% - 50%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.035	0.037	4.4	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.011	0.011	0.0	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.31	0.33	4.7	No Limit
ES2312879-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.012	0.012	0.0	0% - 50%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.18	0.17	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 5008187)									
ES2312767-013	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 5008187) - continued									
ES2312767-013	Anonymous	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.035	0.036	3.5	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2312767-009	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.007	<0.001	147	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 5007639)									
ES2312803-004	DUP01	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2312884-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5008543)									
ES2312767-007	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2312803-005	TRIP01	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5007824)									
ES2312567-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	13.2	13.1	0.5	0% - 20%
ES2312708-005	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.18	0.18	0.0	0% - 50%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5001830)									
ES2312803-003	SMGW-BH-B319	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2312669-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5007825)									
ES2312567-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2312708-005	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5007826)									
ES2312803-006	RIN	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2312961-007	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5007829)									
ES2312567-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	27.0	26.6	1.5	0% - 20%
ES2312708-006	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.1	2.0	0.0	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5007828)									
ES2312567-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	17.9	17.9	0.0	0% - 20%
ES2312708-006	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.24	0.26	9.6	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5007830)									
ES2312828-004	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	1.51	1.53	1.4	0% - 20%
ES2313179-004	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.02	0.05	82.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5001831)									
ES2312803-003	SMGW-BH-B319	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2312669-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.04	127	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 5001561)									
ES2312803-001	SBT-GW-1021	EP005: Total Organic Carbon	----	1	mg/L	27	30	12.0	0% - 20%
EW2301784-002	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	3	4	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 5003879)									
ES2312803-001	SBT-GW-1021	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2312992-002	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 5003879)									
ES2312803-001	SBT-GW-1021	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2312992-002	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074B: Oxygenated Compounds (QC Lot: 5003879) - continued									
ES2312992-002	Anonymous	EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 5003879)									
ES2312803-001	SBT-GW-1021	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2312992-002	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 5003879)									
ES2312803-001	SBT-GW-1021	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2312992-002	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5003879)									
ES2312803-001	SBT-GW-1021	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	6	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5003879) - continued									
ES2312803-001	SBT-GW-1021	EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2312992-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5003879)									
ES2312803-001	SBT-GW-1021	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2312992-002	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074F: Halogenated Aromatic Compounds (QC Lot: 5003879) - continued									
ES2312992-002	Anonymous	EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5003879)									
ES2312803-001	SBT-GW-1021	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2312992-002	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	34	35	3.6	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	26	26	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	12	12	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5003878)									
ES2312803-001	SBT-GW-1021	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2312992-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	30	30	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5003878)									
ES2312803-001	SBT-GW-1021	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2312992-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	20	30	0.0	No Limit
EP080: BTEXN (QC Lot: 5003878)									
ES2312803-001	SBT-GW-1021	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2312992-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5007875)									
EM2306856-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.11	0.11	0.0	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.54	0.50	6.3	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2312951-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5007875) - continued									
ES2312951-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5007875)									
EM2306856-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2312951-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5007875)									
EM2306856-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2312951-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 5006731)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.8	98.8	101
				----	7 pH Unit	99.8	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 5006730)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	103	89.9	110
				<1	2100 µS/cm	102	90.2	111
				<1	58301 µS/cm	97.8	93.3	106
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5005021)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	97.6	87.0	109
				<10	293 mg/L	100	75.2	126
				<10	2340 mg/L	102	83.0	124
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5005022)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	98.0	87.0	109
				<10	293 mg/L	105	75.2	126
				<10	2340 mg/L	100	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 5006732)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	107	81.0	115
				----	50 mg/L	108	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 5001832)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	102	82.0	122
				<1	500 mg/L	99.0	82.0	122
ED045G: Chloride by Discrete Analyser (QCLot: 5001833)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	97.6	80.9	127
				<1	1000 mg/L	104	80.9	127
ED093F: Dissolved Major Cations (QCLot: 5007638)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	98.8	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	97.0	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	99.2	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	96.4	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 5007637)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	91.6	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	103	85.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5007637) - continued								
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.2	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	99.9	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	100	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	97.1	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	99.8	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	90.1	81.0	117
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	105	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 5008187)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	85.8	82.0	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	100	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.6	86.0	116
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	114	84.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.3	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.2	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	107	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	106	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	105	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 5007639)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	102	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5008543)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	99.9	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5007824)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	100	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5001830)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5007825)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	98.6	91.0	113
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5007826)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	99.6	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5007829)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5007829) - continued								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	99.7	69.0	101
				<0.1	1 mg/L	100	70.0	118
				<0.1	5 mg/L	112	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5007828)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	99.6	71.3	126
				<0.01	0.442 mg/L	104	71.3	126
				<0.01	1 mg/L	105	71.3	126
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5007830)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	90.7	71.3	126
				<0.01	0.442 mg/L	110	71.3	126
				<0.01	1 mg/L	109	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5001831)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	108	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 5001561)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	93.0	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 5000655)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	94.6	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	99.6	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	102	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	100	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	105	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	96.8	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	96.4	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	101	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	98.3	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	97.3	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	97.7	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	102	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	101	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	107	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	103	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	104	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	100	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	99.9	65.2	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5000655) - continued								
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	99.5	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	103	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	102	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5000655)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	95.8	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	91.4	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.6	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	107	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	103	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	102	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	104	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	99.7	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	101	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	103	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	101	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	100	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	105	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	97.5	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	104	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	101	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	102	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	106	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	97.1	51.6	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 5003879)								
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	98.7	73.0	119
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	105	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	110	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	107	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	111	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	109	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	108	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	110	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	113	65.0	123
EP074B: Oxygenated Compounds (QCLot: 5003879)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP074B: Oxygenated Compounds (QCLot: 5003879) - continued								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	106	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	104	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	105	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	113	65.0	137
EP074C: Sulfonated Compounds (QCLot: 5003879)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	95.3	72.8	127
EP074D: Fumigants (QCLot: 5003879)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	103	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	100	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	99.0	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	97.9	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	103	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 5003879)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	78.2	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	94.5	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	97.6	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	106	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	101	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	103	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	96.9	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	73.8	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	100	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	102	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	103	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	100	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	101	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	95.5	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	99.6	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	99.3	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	99.2	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	106	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	108	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	100	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	99.8	66.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5003879) - continued								
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	96.3	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	95.3	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	106	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	98.5	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	102	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	98.5	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 5003879)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	106	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	108	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	107	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	110	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	114	67.0	123
EP074G: Trihalomethanes (QCLot: 5003879)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	105	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	98.0	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	98.2	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	90.9	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5000657)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	77.5	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	80.2	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	86.0	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	86.3	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	66.9	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	73.5	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	91.9	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	91.5	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	83.9	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	91.9	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	95.4	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	80.8	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	82.0	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	90.1	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.4	61.2	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5000657) - continued								
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	91.6	59.1	118
EP075A: Phenolic Compounds (QCLot: 5000658)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	35.7	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	68.1	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	66.2	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	64.4	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	80.1	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	77.3	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	80.6	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	80.9	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	81.5	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	86.5	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	86.7	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	88.4	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 5000658)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	67.4	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	68.6	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	72.2	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	79.8	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	77.1	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	82.0	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	87.0	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	86.3	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	90.4	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	89.8	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	103	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	91.5	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	92.1	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	91.2	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	83.6	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	93.1	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	88.2	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	87.9	59.6	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 5000658) - continued								
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	87.7	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	87.4	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 5000658)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	91.2	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	88.2	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	95.4	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	86.8	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	102	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	95.0	62.1	115
EP075D: Nitrosamines (QCLot: 5000658)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	60.9	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	74.4	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	68.1	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	63.0	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	84.0	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	83.8	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	86.9	62.5	108
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	86.4	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	55.8	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 5000658)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	54.3	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	79.9	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	76.3	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	86.3	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	90.0	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	87.1	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	78.2	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	# 97.5	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	87.0	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	83.0	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	87.7	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	83.1	57.8	101

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075E: Nitroaromatics and Ketones (QCLot: 5000658) - continued								
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	74.8	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	86.2	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	88.6	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	90.0	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	91.6	57.7	110
EP075F: Haloethers (QCLot: 5000658)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	75.3	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	84.5	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	77.6	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	80.8	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 5000658)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	53.0	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	52.0	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	55.2	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	49.9	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	55.4	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	49.2	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	51.9	37.4	100
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	45.0	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	66.4	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	79.6	65.7	110
EP075H: Anilines and Benzidines (QCLot: 5000658)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	69.6	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	82.9	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	87.9	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	83.3	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	76.4	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	81.4	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	91.0	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	111	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 5000658)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	86.0	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	86.6	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	84.3	51.0	111

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075I: Organochlorine Pesticides (QCLot: 5000658) - continued								
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	89.1	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	88.1	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	88.0	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	91.7	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	90.8	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	88.5	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	88.7	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	88.7	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	89.9	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	91.9	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	96.2	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	92.8	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 5000658)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	90.5	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	85.6	43.0	109
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	90.1	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	93.1	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	104	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	93.4	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	91.7	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	92.1	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	88.1	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	91.3	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	96.9	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5000656)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	88.6	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	79.7	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	107	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5003878)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	104	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5000656)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5000656) - continued								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	72.0	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	88.2	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	87.6	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5003878)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	106	75.0	127
EP080: BTEXN (QCLot: 5003878)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	98.6	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	102	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	103	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	104	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	102	75.5	124
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5007875)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	97.0	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	85.0	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	80.8	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5007875)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	81.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5007875)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	86.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	96.8	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	91.8	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Matrix Spike (MS) Report: Spike	SpikeRecovery(%)	Acceptable Limits (%)

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 5001832)							
ES2312669-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	108	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 5001833)							
ES2312669-001	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	101	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 5007637)							
ES2312803-003	SMGW-BH-B319	EG020A-F: Arsenic	7440-38-2	1 mg/L	115	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	103	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	109	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	117	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	94.2	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	96.7	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	110	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	116	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	107	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 5008187)							
ES2312767-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	109	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	116	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	116	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	112	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	112	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	125	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	121	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	113	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	108	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 5007639)							
ES2312803-002	SMGW-BH-B120	EG035F: Mercury	7439-97-6	0.01 mg/L	87.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5008543)							
ES2312767-008	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	97.3	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5007824)							
ES2312567-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5001830)							
ES2312669-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	106	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5007825)							
ES2312567-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	86.4	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5007826)							
ES2312803-006	RIN	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	97.2	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5007829)							
ES2312650-004	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	99.0	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5007828)							
ES2312650-004	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	109	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5007830)							
ES2312960-001	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	113	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5001831)							
ES2312669-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	104	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 5001561)							
ES2312803-002	SMGW-BH-B120	EP005: Total Organic Carbon	----	100 mg/L	112	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5003879)							
ES2312803-001	SBT-GW-1021	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	94.1	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	110	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5003879)							
ES2312803-001	SBT-GW-1021	EP074: Chlorobenzene	108-90-7	25 µg/L	106	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5003878)							
ES2312803-001	SBT-GW-1021	EP080: C6 - C9 Fraction	----	325 µg/L	122	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5003878)							
ES2312803-001	SBT-GW-1021	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	118	70.0	130
EP080: BTEXN (QCLot: 5003878)							
ES2312803-001	SBT-GW-1021	EP080: Benzene	71-43-2	25 µg/L	110	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	111	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	116	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	117	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	110	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	95.9	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5007875)							
EM2306856-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	# Not Determined	72.0	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	# Not Determined	68.0	131
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	# Not Determined	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5007875)							
EM2306856-004	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	104	73.0	129

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5007875) - continued							
EM2306856-004	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	# Not Determined	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	# Not Determined	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	# Not Determined	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	# Not Determined	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5007875)							
EM2306856-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	114	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	134	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	102	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	122	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2312803**	Page	: 1 of 16
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MS EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: 754-SYDGE29257-4 WSA	Date Samples Received	: 19-Apr-2023
Site	:	Issue Date	: 28-Apr-2023
Sampler	: Ben Everingham	No. of samples received	: 6
Order number	: ----	No. of samples analysed	: 6

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075E: Nitroaromatics and Ketones	QC-5000658-002	----	**4-Nitroquinoline-N-oxide**	56-57-5	97.5 %	40.0-96.0%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EK055G: Ammonia as N by Discrete Analyser	ES2312567--001	Anonymous	**Ammonia as N**	7664-41-7	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EM2306856--004	Anonymous	**Perfluorobutane sulfonic acid (PFBS)**	375-73-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EM2306856--004	Anonymous	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EM2306856--004	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM2306856--004	Anonymous	**Perfluoropentanoic acid (PFPeA)**	2706-90-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM2306856--004	Anonymous	**Perfluorohexanoic acid (PFHxA)**	307-24-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM2306856--004	Anonymous	**Perfluoroheptanoic acid (PFHpA)**	375-85-9	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM2306856--004	Anonymous	**Perfluorooctanoic acid (PFOA)**	335-67-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2312803-002	SMGW-BH-B120	**Dibromo-DDE**	21655-73-2	60.6 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2312803-005	TRIP01	**Dibromo-DDE**	21655-73-2	51.6 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068S: Organochlorine Pesticide Surrogate	ES2312803-006	RIN	**Dibromo-DDE**	21655-73-2	65.9 %	66.5-111 %	**Recovery less than lower data quality objective**
EP068T: Organophosphorus Pesticide Surrogate	ES2312803-005	TRIP01	**DEF**	78-48-8	52.5 %	66.5-111 %	**Recovery less than lower data quality objective**

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted - Continued							
EP068T: Organophosphorus Pesticide Surrogate	ES2312803-006	RIN	**DEF**	78-48-8	66.3 %	66.5-111 %	**Recovery less than lower data quality objective**
EP075T: Base/Neutral Extractable Surrogates	ES2312803-002	SMGW-BH-B120	**1.2-Dichlorobenzene-D4**	2199-69-1	19.4 %	23.6-121 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	ES2312803-002	SMGW-BH-B120	**Toluene-D8**	2037-26-5	132 %	75.3-131 %	**Recovery greater than upper data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / **Container** / Client Sample ID(s)		*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
SBT-GW-1021, SMGW-BH-B319, TRIP01,	SMGW-BH-B120, DUP01, RIN	----	----	----	21-Apr-2023	18-Apr-2023	**3**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
	0				
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	----	----	----	**21-Apr-2023**	18-Apr-2023	×
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	----	----	----	**21-Apr-2023**	16-May-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	----	----	----	**21-Apr-2023**	25-Apr-2023	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	----	----	----	**21-Apr-2023**	02-May-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	----	----	----	**20-Apr-2023**	16-May-2023	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	----	----	----	**20-Apr-2023**	16-May-2023	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Natural (ED093F) RIN	**18-Apr-2023**	----	----	----	**24-Apr-2023**	25-Apr-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01	**18-Apr-2023**	----	----	----	**24-Apr-2023**	16-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Natural (EG020A-F) RIN	18-Apr-2023	----	----	----	24-Apr-2023	15-Oct-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01	18-Apr-2023	----	----	----	24-Apr-2023	15-Oct-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	18-Apr-2023	24-Apr-2023	15-Oct-2023	✓	24-Apr-2023	15-Oct-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Natural (EG035F) RIN	18-Apr-2023	----	----	----	26-Apr-2023	16-May-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01	18-Apr-2023	----	----	----	26-Apr-2023	16-May-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	18-Apr-2023	----	----	----	27-Apr-2023	16-May-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	18-Apr-2023	----	----	----	26-Apr-2023	16-May-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	18-Apr-2023	----	----	----	20-Apr-2023	20-Apr-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	18-Apr-2023	----	----	----	26-Apr-2023	16-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	**24-Apr-2023**	16-May-2023	✓	**26-Apr-2023**	16-May-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	**24-Apr-2023**	16-May-2023	✓	**26-Apr-2023**	16-May-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	**----**	----	----	**20-Apr-2023**	20-Apr-2023	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	**----**	----	----	**21-Apr-2023**	16-May-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, TRIP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, RIN	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) TRIP01	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**27-Apr-2023**	02-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, RIN	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) TRIP01	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**27-Apr-2023**	02-May-2023	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, RIN	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) TRIP01	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**27-Apr-2023**	02-May-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, RIN	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) TRIP01	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**27-Apr-2023**	02-May-2023	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, RIN	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) TRIP01	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**27-Apr-2023**	02-May-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, RIN	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) TRIP01	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**27-Apr-2023**	02-May-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1021, SMGW-BH-B120, SMGW-BH-B319, DUP01, RIN	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) TRIP01	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**27-Apr-2023**	02-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM)) SBT-GW-1021, SMGW-BH-B319, TRIP01,	SMGW-BH-B120, DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP075A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075) SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075) SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP075C: Phthalate Esters								
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075) SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP075D: Nitrosamines								
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075) SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP075E: Nitroaromatics and Ketones								
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075) SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP075F: Haloethers								
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075) SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075G: Chlorinated Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP075H: Anilines and Benzidines								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP075J: Organophosphorus Pesticides								
Amber Glass Bottle - Unpreserved (EP075)								
SBT-GW-1021,	SMGW-BH-B120	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075)								
SMGW-BH-B319, TRIP01,	DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**23-Apr-2023**	31-May-2023	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1021, SMGW-BH-B319, TRIP01,	SMGW-BH-B120, DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1021, SMGW-BH-B319, TRIP01,	SMGW-BH-B120, DUP01, RIN	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
SBT-GW-1021, SMGW-BH-B319, TRIP01,	SMGW-BH-B120, DUP01, RIN	**18-Apr-2023**	**21-Apr-2023**	25-Apr-2023	✓	**22-Apr-2023**	31-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1021, SMGW-BH-B319, TRIP01,	SMGW-BH-B120, DUP01, RIN	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
SBT-GW-1021,	SMGW-BH-B120,	**18-Apr-2023**	**26-Apr-2023**	02-May-2023	✓	**26-Apr-2023**	02-May-2023	✓
SMGW-BH-B319,	DUP01,							
TRIP01,	RIN							
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1021,	SMGW-BH-B120,	**18-Apr-2023**	**24-Apr-2023**	15-Oct-2023	✓	**26-Apr-2023**	15-Oct-2023	✓
SMGW-BH-B319,	DUP01,							
TRIP01,	RIN							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1021,	SMGW-BH-B120,	**18-Apr-2023**	**24-Apr-2023**	15-Oct-2023	✓	**26-Apr-2023**	15-Oct-2023	✓
SMGW-BH-B319,	DUP01,							
TRIP01,	RIN							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SBT-GW-1021,	SMGW-BH-B120,	**18-Apr-2023**	**24-Apr-2023**	15-Oct-2023	✓	**26-Apr-2023**	15-Oct-2023	✓
SMGW-BH-B319,	DUP01,							
TRIP01,	RIN							
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SBT-GW-1021,	SMGW-BH-B120,	**18-Apr-2023**	**24-Apr-2023**	15-Oct-2023	✓	**26-Apr-2023**	15-Oct-2023	✓
SMGW-BH-B319,	DUP01,							
TRIP01,	RIN							

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	6	58	10.34	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	8	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	5	58	8.62	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	8	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	40	**15.00**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	6	36	**16.67**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	58	**1.72**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT: TTC	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☑ Standard TAT (List due date): 27.4.23	FOR LABORATORY USE ONLY (Circle)
OFFICE: Chatswood		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT: WSA 754 [illegible] 292575-4	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: C
PROJECT MANAGER: Emma Stephens	CONTACT PH: 0458499700	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: Ben Everingham	SAMPLER MOBILE: 0460319196		
COC Emailed to ALS? (YES / NO)	EDD FORMAT (or default): Esdat		
Email Reports to (will default to PM if no other addresses are listed):			
Email Invoice to (will default to PM if no other addresses are listed):			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
BE	Jack		
DATE/TIME: 19.4.23 1400	DATE/TIME: 19/04/23 1410	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY — SAMPLE DETAILS MATRIX: Solid(S) Water(W) — CONTAINER INFORMATION — ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required). — Additional Information

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	pH, EC, TDS,	MAJOR IONS (Ca, Mg, Na, K, Cl, SO4, Alkalinity)	Dissolved metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)	Total metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)	Nutrients (Total Nitrogen + NO2 + NO3 + Total P + Reactive P)	PAH	VOC/SVOC (including TRH/BTEX)	OCP/OPP	PFAS Short Suite	TOC	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	SBT-GW-1021	18.4.23	Water	3xV, 2xPFAS, 2xN, 1xSH, 1xP, 1xSP, 1xAG	11	X	X	X	X	X	X	X	X	X	X	
2	SMGW-BH-B120	↓	↓	↓	↓	X	X	X	X	X	X	X	X	X	X	
3	SMGW-BH-B319	↓	↓	↓	↓	X	X	X	X	X	X	X	X	X	X	
4	DUP01	↓	↓	↓	↓	X	X	X	X	X	X	X	X	X	X	
5	TRIP01	↓	↓	↓	↓	X	X	X	X	X	X	X	X	X	X	
6	RIN	↓	↓	↓	↓	X	X	X	X	X	X	X	X	X	X	
					TOTAL											

Environmental Division
Sydney
Work Order Reference
ES2312803

Telephone : - 61-2-8784 8555

HT

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Gl... V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Th... ...ed Plastic; F = Formaldehyde Preserved Glass.

CERTIFICATE OF ANALYSIS

Work Order	: **ES2314185**	Page	: 1 of 15
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 01-May-2023 16:00
Order number	: ----	Date Analysis Commenced	: 01-May-2023
C-O-C number	: ----	Issue Date	: 05-May-2023 18:58
Sampler	: Katie Trevor		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG035: Poor matrix spike recovery was obtained for Mercury on sample ES2314055 # 8. Confirmed by re-analysis.
- It has been noted that Nitrite is greater than NOx, however this difference is within the limits of experimental variation.
- EP075(SIM): Surrogate recovery bias low due to sample matrix interferences.
- EP075: Poor Phenolic surrogate recovery due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**8.37**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**13900**	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**8920**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	**4**	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**11**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**15**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**109**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**5340**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**373**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**19**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**2430**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**32**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.001**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	**0.058**	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.004**	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.003**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.002**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**1.39**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.10**	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.10**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**3.3**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**3.4**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.52**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**153**	----	----	----	----
ø Total Cations	----	0.01	meq/L	**127**	----	----	----	----
ø Ionic Balance	----	0.01	%	**9.47**	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**9**	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
Styrene	100-42-5	5	µg/L	<5	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	----	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	----	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	----	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP074G: Trihalomethanes - Continued								
Chloroform	67-66-3	5	µg/L	**9**	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	----	----	----	----
Bromoform	75-25-2	5	µg/L	<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L	<2	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075A: Phenolic Compounds - Continued								
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	----	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	----	----	----	----
Fluorene	86-73-7	2	µg/L	<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	----	----	----	----
Anthracene	120-12-7	2	µg/L	<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	----	----	----	----
Pyrene	129-00-0	2	µg/L	<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	----	----	----	----
Chrysene	218-01-9	2	µg/L	<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	----	----
EP075D: Nitrosamines								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075D: Nitrosamines - Continued								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	----	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	----	----	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	----	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	----	----	----	----
Isophorone	78-59-1	2	µg/L	<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	----	----	----	----
Azobenzene	103-33-3	2	µg/L	<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	----	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075G: Chlorinated Hydrocarbons - Continued								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	----	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	----	----	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	----	----	----	----
Carbazole	86-74-8	2	µg/L	<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	----	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	----	----	----	----
Aldrin	309-00-2	2	µg/L	<2	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L	<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	----	----	----	----
Endrin	72-20-8	2	µg/L	<2	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075I: Organochlorine Pesticides - Continued								
4.4`-DDT	50-29-3	4	µg/L	<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	----	----	----	----
Diazinon	333-41-5	2	µg/L	<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	----	----
Malathion	121-75-5	2	µg/L	<2	----	----	----	----
Fenthion	55-38-9	2	µg/L	<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	----	----	----	----
Ethion	563-12-2	2	µg/L	<2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP080: BTEXN - Continued								
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ Total Xylenes	----	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	**90.1**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SBT-GW-1803	----	----	----	----
			Sampling date / time	01-May-2023 10:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2314185-001	--------	--------	--------	--------
				Result	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate - Continued								
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	93.3	----	----	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	119	----	----	----	----
Toluene-D8	2037-26-5	5	%	120	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	119	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	11.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	Not Determined	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	Not Determined	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	78.6	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	93.8	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	98.4	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	Not Determined	----	----	----	----
Phenol-d6	13127-88-3	2	%	11.4	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	6.7	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	Not Determined	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	78.0	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	60.2	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	74.7	----	----	----	----
Anthracene-d10	1719-06-8	2	%	91.7	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	92.2	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	116	----	----	----	----
Toluene-D8	2037-26-5	2	%	118	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	111	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	98.6	----	----	----	----
13C8-PFOA	----	0.02	%	102	----	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2314185**	Page	: 1 of 21
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 01-May-2023
Order number	: ----	Date Analysis Commenced	: 01-May-2023
C-O-C number	: ----	Issue Date	: 05-May-2023
Sampler	: Katie Trevor		
Site	: ----		
Quote number	: SY/373/22_V2		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 5020766)									
ES2314185-001	SBT-GW-1803	EA005-P: pH Value	----	0.01	pH Unit	8.37	9.47	12.3	0% - 20%
ES2314095-005	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.67	7.77	1.3	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 5020765)									
ES2314185-001	SBT-GW-1803	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	13900	13800	0.5	0% - 20%
ES2314186-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	592	589	0.5	0% - 20%
ES2314095-005	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	785	782	0.4	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5024011)									
ES2313915-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	46	54	17.0	No Limit
ES2313952-009	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	7860	7780	1.0	0% - 20%
ES2314055-003	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	16800	16800	0.6	0% - 20%
ES2314185-001	SBT-GW-1803	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	8920	8930	0.1	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 5020770)									
ES2314174-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	100	104	3.6	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	100	104	3.6	0% - 20%
ES2314186-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	9	<1	161	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	86	89	2.7	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	96	89	7.5	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 5022212)									
WN2305414-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	12	12	0.0	0% - 50%
ES2314185-001	SBT-GW-1803	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	109	120	9.1	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
ED045G: Chloride by Discrete Analyser (QC Lot: 5022211)									
ES2313895-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	10300	10900	5.8	0% - 20%
ES2314185-001	SBT-GW-1803	ED045G: Chloride	16887-00-6	1	mg/L	5340	5290	1.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 5023601)									
ES2314055-006	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	91	94	3.1	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	511	526	3.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4280	4380	2.1	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	10	10	0.0	0% - 50%
ES2314157-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	333	338	1.5	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	468	470	0.4	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	2030	2060	1.8	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	42	42	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5023599)									
ES2314055-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.630	0.655	3.8	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2314157-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.003	0.004	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.441	0.446	1.2	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.015	0.016	0.0	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.024	0.025	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	3.22	3.26	0.9	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 5025170)									
ES2314001-001	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.164	0.166	1.8	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	3.79	3.90	2.8	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	2.88	2.84	1.5	0% - 20%
EW2301934-001	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.003	0.003	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 5025170) - continued									
EW2301934-001	Anonymous	EG020A-T: Manganese	7439-96-5	0.001	mg/L	1.11	1.07	3.6	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.40	0.47	14.7	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	21.5	21.0	2.2	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 5023600)									
ES2314055-009	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2314157-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5023695)									
ES2314092-013	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	97.7	99.5	1.9	0% - 20%
EW2301910-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.08	0.04	69.3	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5022213)									
ES2314185-001	SBT-GW-1803	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.10	0.11	9.5	0% - 50%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5023694)									
ES2314092-013	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.01	<0.01	0.0	No Limit
EW2301910-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	3.36	3.35	0.4	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5023690)									
ES2314092-013	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	96.5	92.1	4.6	0% - 20%
EW2301762-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.2	0.2	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5023691)									
ES2314092-013	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.29	0.30	0.0	0% - 20%
EW2301762-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.05	0.06	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5022214)									
ES2314185-001	SBT-GW-1803	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 5020851)									
ES2314095-004	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	16	14	15.7	0% - 50%
ES2314175-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	308	345	11.3	0% - 20%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 5021469)									
ES2314055-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	5	5	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 5021469) - continued									
ES2314055-001	Anonymous	EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2314185-001	SBT-GW-1803	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 5021469)									
ES2314055-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2314185-001	SBT-GW-1803	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 5021469)									
ES2314055-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2314185-001	SBT-GW-1803	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 5021469)									
ES2314055-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2314185-001	SBT-GW-1803	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074D: Fumigants (QC Lot: 5021469) - continued									
ES2314185-001	SBT-GW-1803	EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5021469)									
ES2314055-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	16	14	6.8	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	216	236	8.9	0% - 20%
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	432	469	8.3	0% - 20%
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2314185-001	SBT-GW-1803	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5021469) - continued									
ES2314185-001	SBT-GW-1803	EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5021469)									
ES2314055-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2314185-001	SBT-GW-1803	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5021469)									
ES2314055-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2314185-001	SBT-GW-1803	EP074: Chloroform	67-66-3	5	µg/L	9	9	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5021470)									
ES2314055-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	610	550	11.2	0% - 20%
ES2314185-001	SBT-GW-1803	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5021470)									
ES2314055-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	620	550	11.2	0% - 20%
ES2314185-001	SBT-GW-1803	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 5021470)									
ES2314055-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	5	5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2314185-001	SBT-GW-1803	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 5020766)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.8	98.8	101
				----	7 pH Unit	99.6	99.2	101
EA010P: Conductivity by PC Titrator (QCLot: 5020765)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	101	89.9	110
				<1	2100 µS/cm	102	90.2	111
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5024011)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	98.2	87.0	109
				<10	293 mg/L	104	75.2	126
				<10	2340 mg/L	104	83.0	124
ED037P: Alkalinity by PC Titrator (QCLot: 5020770)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	92.5	81.0	115
				----	50 mg/L	103	80.0	120
ED045G: Chloride by Discrete Analyser (QCLot: 5022211)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	50 mg/L	96.8	80.9	127
				<1	1000 mg/L	106	80.9	127
ED093F: Dissolved Major Cations (QCLot: 5023601)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	93.1	80.0	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	92.2	90.0	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	98.1	82.0	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	95.5	85.0	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 5023599)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	89.7	80.0	116
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	93.8	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.0	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	87.4	85.0	111
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	90.7	82.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.6	83.0	111
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	88.1	82.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.0	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.4	81.0	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5023599) - continued								
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	87.6	82.0	112
EG020T: Total Metals by ICP-MS (QCLot: 5025170)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	90.7	82.0	120
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.9	84.0	116
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	90.4	85.0	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	91.7	85.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 5023600)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.9	83.0	105
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5023695)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	99.9	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5022213)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	96.4	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5023694)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	105	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5023690)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	97.6	69.0	101
				<0.1	1 mg/L	103	70.0	118
				<0.1	5 mg/L	98.1	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5023691)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	85.0	71.3	126
				<0.01	0.442 mg/L	101	71.3	126
				<0.01	1 mg/L	102	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5022214)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	95.3	85.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 5020851)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	91.6	72.0	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 5021979)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	74.5	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	96.9	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	86.7	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	79.7	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	88.1	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	87.6	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	82.5	65.8	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5021979) - continued								
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	86.6	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	86.7	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	84.4	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	85.3	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	86.9	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.8	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	82.5	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	89.2	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	96.5	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	77.9	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	80.3	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	87.4	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	78.9	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	78.9	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5021979)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	97.6	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	95.6	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	25.4	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	82.8	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	99.2	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	87.4	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	74.4	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	93.6	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	85.9	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	84.8	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	79.4	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	91.1	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	85.6	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	91.7	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	79.5	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	91.8	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	87.6	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	79.2	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	78.2	51.6	128

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 5021469)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.4	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.0	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	97.3	76.0	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	97.8	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	97.9	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.6	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	97.0	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	93.7	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	95.1	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	97.1	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	93.2	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	96.3	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	93.9	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	91.5	65.0	123
EP074B: Oxygenated Compounds (QCLot: 5021469)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	91.3	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	104	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	94.8	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	98.7	65.0	137
EP074C: Sulfonated Compounds (QCLot: 5021469)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	88.0	72.8	127
EP074D: Fumigants (QCLot: 5021469)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	94.0	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	95.0	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	87.7	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	87.4	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	96.2	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 5021469)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	83.5	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	90.1	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	90.4	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	91.4	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	91.0	61.0	139

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5021469) - continued								
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	91.6	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	90.8	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	74.0	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	93.0	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	92.8	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	94.0	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	91.4	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	94.5	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	89.7	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	96.5	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	93.2	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	92.9	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	96.5	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	101	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	104	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	88.0	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	95.0	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	85.0	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	96.2	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	99.3	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	80.9	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	81.8	66.4	136
EP074F: Halogenated Aromatic Compounds (QCLot: 5021469)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	97.9	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	93.7	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	98.8	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	94.1	73.0	119
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	103	67.0	123
EP074G: Trihalomethanes (QCLot: 5021469)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	101	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	89.8	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	87.4	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	90.4	73.5	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5021977)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5021977) - continued								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	83.6	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	85.7	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	92.6	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	97.5	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	105	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	85.7	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	112	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	112	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	114	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	108	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	110	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	93.9	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	105	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	115	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	114	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	118	59.1	118
EP075A: Phenolic Compounds (QCLot: 5021976)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	42.1	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	75.8	52.0	88.0
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	69.3	50.0	94.0
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	65.8	45.0	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	80.1	48.0	98.0
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	82.2	50.0	94.0
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	82.6	61.9	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	84.7	61.5	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	83.2	61.4	107
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	85.7	57.6	112
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	88.0	58.0	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	20 µg/L	84.3	12.8	95.0
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 5021976)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	81.9	51.0	95.0
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	83.3	59.0	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	79.2	60.6	106

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 5021976) - continued								
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	88.8	64.0	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	90.3	65.0	108
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	93.5	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	94.7	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	95.1	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	97.0	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	94.6	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	96.1	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	102	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	102	59.3	114
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	96.1	60.1	111
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	# 112	50.0	108
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	95.2	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	98.8	60.1	110
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	96.0	59.6	110
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	95.8	57.2	109
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	94.7	60.6	110
EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters (QCLot: 5021976)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	93.8	64.3	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	95.9	67.3	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	97.8	68.4	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	98.3	61.2	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	118	60.0	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	106	62.1	115
EP075D: Nitrosamines (QCLot: 5021976)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	62.2	46.0	110
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	76.9	60.6	113
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	67.1	45.0	91.0
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	67.5	42.0	100
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	86.1	63.5	108
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	82.0	61.7	107
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	81.4	62.5	108

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075D: Nitrosamines (QCLot: 5021976) - continued								
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	20 µg/L	94.2	64.6	112
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	29.5	23.3	125
EP075E: Nitroaromatics and Ketones (QCLot: 5021976)								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	55.4	41.0	109
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	82.0	68.3	112
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	78.5	68.3	112
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	88.3	67.6	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	92.8	64.4	113
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	92.8	59.5	109
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	97.8	46.8	102
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	93.7	40.0	96.0
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	94.0	58.3	106
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	94.6	66.0	112
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	94.5	46.0	108
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	85.4	57.8	101
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	94.2	60.1	112
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	91.5	59.0	109
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	95.4	62.7	109
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	93.5	59.4	108
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	95.4	57.7	110
EP075F: Haloethers (QCLot: 5021976)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	74.6	69.1	112
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	85.1	66.2	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	93.3	64.7	109
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	91.7	61.6	108
EP075G: Chlorinated Hydrocarbons (QCLot: 5021976)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	73.7	41.0	97.0
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	74.1	40.0	96.0
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	76.1	41.0	95.0
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	73.8	46.0	88.0
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	76.8	46.0	96.0
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	77.0	34.0	96.0
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	79.1	37.4	100

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075G: Chlorinated Hydrocarbons (QCLot: 5021976) - continued								
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	67.4	23.5	107
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	87.6	64.5	107
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	91.8	65.7	110
EP075H: Anilines and Benzidines (QCLot: 5021976)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	81.8	50.0	104
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	85.8	42.0	106
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	89.0	60.9	110
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	90.1	51.5	96.9
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	89.9	65.3	108
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	87.2	48.9	99.5
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	95.2	64.3	107
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	104	60.3	119
EP075I: Organochlorine Pesticides (QCLot: 5021976)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	92.0	64.3	110
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	95.3	53.0	107
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	92.9	51.0	111
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	97.0	57.0	111
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	95.8	57.9	108
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	92.8	56.0	112
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	92.2	50.0	118
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	93.4	59.0	111
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	93.4	53.0	115
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	95.8	59.0	115
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	95.8	58.0	114
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	96.7	54.0	116
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	95.1	55.0	115
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	95.6	52.8	114
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	96.4	56.0	114
EP075: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
EP075: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides (QCLot: 5021976)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	94.6	51.0	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	87.4	43.0	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075J: Organophosphorus Pesticides (QCLot: 5021976) - continued								
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	97.8	49.0	113
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	95.2	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	102	54.0	124
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	95.9	57.0	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	96.1	53.0	109
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	96.0	55.0	111
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	87.7	50.0	116
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	95.8	54.0	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	97.0	51.0	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5021470)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	87.7	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5021978)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	71.2	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	74.5	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	90.9	58.3	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5021470)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	90.6	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5021978)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	66.3	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	71.6	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	74.6	50.5	115
EP080: BTEXN (QCLot: 5021470)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.3	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.6	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	100	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	99.7	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	102	75.5	124
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5026262)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	110	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	115	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5026262)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5026262) - continued								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	108	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	120	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	110	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5026262)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	83.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	109	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	122	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 5022212)							
ES2314185-001	SBT-GW-1803	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 5022211)							
ES2313895-002	Anonymous	ED045G: Chloride	16887-00-6	50 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 5023599)							
ES2314055-007	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	113	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	93.9	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	90.6	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	103	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	100	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	101	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	92.5	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	101	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	98.4	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 5025170)							
ES2314094-054	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	94.9	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5025170) - continued							
ES2314094-054	Anonymous	EG020A-T: Manganese	7439-96-5	1 mg/L	98.9	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 5023600)							
ES2314055-008	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	# 61.0	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5023695)							
ES2314092-013	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5022213)							
ES2314185-001	SBT-GW-1803	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	111	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5023694)							
ES2314092-013	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	99.9	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5023690)							
ES2314092-014	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	# Not Determined	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5023691)							
ES2314092-014	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	105	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5022214)							
ES2314185-001	SBT-GW-1803	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	108	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 5020851)							
ES2314095-005	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	91.1	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 5021469)							
ES2314055-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	124	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	118	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5021469)							
ES2314055-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	95.1	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	# Not Determined	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5021469)							
ES2314055-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	118	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5021470)							
ES2314055-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	104	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5021470)							
ES2314055-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	106	70.0	130
EP080: BTEXN (QCLot: 5021470)							
ES2314055-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	98.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 5021470) - continued							
ES2314055-001	Anonymous	EP080: Toluene	108-88-3	25 µg/L	94.5	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	101	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	96.3	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	97.6	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	90.3	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2314185**	Page	: 1 of 12
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: EMMA STEPHENS	Telephone	: + 61 2 8784 8555
Project	: SYDGE292575-4 WSA SBT	Date Samples Received	: 01-May-2023
Site	: ----	Issue Date	: 05-May-2023
Sampler	: Katie Trevor	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075B: Polynuclear Aromatic Hydrocarbons	QC-5021976-002	----	**7.12-Dimethylbenz(a)anthracene**	57-97-6	112 %	50.0-108%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES2314185--001	SBT-GW-1803	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	ES2313895--002	Anonymous	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG035F: Dissolved Mercury by FIMS	ES2314055--008	Anonymous	**Mercury**	7439-97-6	61.0 %	70.0-130%	**Recovery less than lower data quality objective**
EK055G: Ammonia as N by Discrete Analyser	ES2314092--013	Anonymous	**Ammonia as N**	7664-41-7	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	ES2314092--014	Anonymous	**Total Kjeldahl Nitrogen as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP074E: Halogenated Aliphatic Compounds	ES2314055--001	Anonymous	**Trichloroethene**	79-01-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075S: Acid Extractable Surrogates	ES2314185-001	SBT-GW-1803	**2-Chlorophenol-D4**	93951-73-6	6.7 %	20.9-130 %	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	0				
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)					

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
	0				
Laboratory Control Samples (LCS) - Continued					
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)					
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) SBT-GW-1803	**01-May-2023**	----	----	----	**01-May-2023**	01-May-2023	✓
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P) SBT-GW-1803	**01-May-2023**	----	----	----	**01-May-2023**	29-May-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) SBT-GW-1803	**01-May-2023**	----	----	----	**03-May-2023**	08-May-2023	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) SBT-GW-1803	**01-May-2023**	----	----	----	**01-May-2023**	15-May-2023	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) SBT-GW-1803	**01-May-2023**	----	----	----	**03-May-2023**	29-May-2023	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) SBT-GW-1803	**01-May-2023**	----	----	----	**03-May-2023**	29-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)							
SBT-GW-1803	01-May-2023	----	----	----	03-May-2023	29-May-2023	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
SBT-GW-1803	01-May-2023	----	----	----	03-May-2023	28-Oct-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
SBT-GW-1803	01-May-2023	03-May-2023	28-Oct-2023	✓	03-May-2023	28-Oct-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
SBT-GW-1803	01-May-2023	----	----	----	04-May-2023	29-May-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
SBT-GW-1803	01-May-2023	----	----	----	03-May-2023	29-May-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
SBT-GW-1803	01-May-2023	----	----	----	03-May-2023	03-May-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
SBT-GW-1803	01-May-2023	----	----	----	03-May-2023	29-May-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
SBT-GW-1803	01-May-2023	03-May-2023	29-May-2023	✓	04-May-2023	29-May-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
SBT-GW-1803	01-May-2023	03-May-2023	29-May-2023	✓	04-May-2023	29-May-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
SBT-GW-1803	01-May-2023	----	----	----	03-May-2023	03-May-2023	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005)							
SBT-GW-1803	01-May-2023	----	----	----	03-May-2023	29-May-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	03-May-2023	11-Jun-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	03-May-2023	11-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	03-May-2023	11-Jun-2023	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	04-May-2023	11-Jun-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	03-May-2023	11-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) SBT-GW-1803	01-May-2023	02-May-2023	08-May-2023	✓	03-May-2023	11-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) SBT-GW-1803	01-May-2023	03-May-2023	15-May-2023	✓	04-May-2023	15-May-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) SBT-GW-1803	01-May-2023	04-May-2023	28-Oct-2023	✓	05-May-2023	28-Oct-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) SBT-GW-1803	01-May-2023	04-May-2023	28-Oct-2023	✓	05-May-2023	28-Oct-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) SBT-GW-1803	01-May-2023	04-May-2023	28-Oct-2023	✓	05-May-2023	28-Oct-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) SBT-GW-1803	01-May-2023	04-May-2023	28-Oct-2023	✓	05-May-2023	28-Oct-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	4	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	25	12.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	1	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	5	40.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	4	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	3	25	12.00	8.33	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Pesticides by GCMS	EP068	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	0	5	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	5	40	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	14	**21.43**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	25	**4.00**	**1.67**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: ~~jack.flanagan@tetratech.com~~

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: ~~Jack Flanagan~~ Katie Trevor — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix *(Soil...etc)*	Container Type & Preservative*	T-A-T *(specify)*	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	SBT-GW-1803	1/5/23	10:30	Water	Bottles	Std (5-day)		X						
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

HT

Environmental Division Sydney
Work Order Reference
ES2314185
Telephone : + 61-2-8784 8555

RELINQUISHED BY

Name: Katie Trevor — Date: 1/5/23
Coffey — Time: 14:00

Name: — Date:
Company: — Time:

RECEIVED BY

Name: Jack — Date: 01/05/23
Company: ALS — Time: 1000

Name: — Date:
Company: — Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens

Invoices to: general.admin@tetratech.com

email ~~Mobile:~~ emma.stephens@tetratech.com Email: jack.flanagan@tetratech.com

Phone: casey.farrell@tetratech.com Email: esdat_labreports@coffey.com

Project No: 292575-1 Task No:

Project Name: WSA SBT Laboratory: ALS

Sampler's Name: Jack Fanagan Project Manager: EMMA STEPHENS

Quote number (if different to current quoted prices): 54 | 373 | 22 V2

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring Extended Suite	Baseline Monitoring Rinsate	NOTES
1	SBT-GW-1002	22/11/22		Water	Bottles	STD	X		
2	SBT-GW-4003						X		
3	QC1_221122_JF						X		
4	QC2_221122_JF						X		Send to Eurofins
	RB_221122_JF							X	

Subcon / Forward Lab / Split WO

Lab / Analysis: Eurofins - QC2-221122-JF

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

WO No:

Attached By PO / Internal Sheet:

HT

Environmental Division
Sydney
Work Order Reference
ES2242287

Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jack.t	Date: 22/11/22	Name: JG	Date: 22/11/22
Coffey	Time: 2:00	Company: AU	Time: 1720
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No.

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Eurofins: 23/11/22 4:00PM 3.9°C

944217

RE: Attention: Eurofins Sample Receipt Advice - Report 944217 : Site WSA SDT (292575-1)

Stephens, Emma <Emma.Stephens@tetratech.com>

Fri 2022-11-25 5:53 PM

To: #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

Cc: Flanagan, Jack <JACK.FLANAGAN@tetratech.com>;O'Farrell, Casey <Casey.OFarrell@tetratech.com>;Harry Bacalis <HarryBacalis@eurofins.com>

> **CAUTION:** EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.
>
> Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Hi Lisa,

Please analyse QC2_221122_ JF for the following:

- General water quality (pH, EC, TDS)
- TOC
- Major ions (Ca, Mg, Na, K, Cl, SO4, Alkalinity)
- Dissolved metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg, CrIII)
- Total metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)
- Nutrients (Total Nitrogen + NO2 + NO3 + NH3 + Total P + Reactive P)
- Petroleum Hydrocarbons **– only if TRH/BTEXN is required in addition to the VOC/SVOC suites**
- Aromatic Hydrocarbons
- Poly-Aromatic Hydrocarbons
- VOCs/SVOCs
- OCPs/OPPs
- PFAS short suite

- **PLACE HOLDERS – only to be analysed if requested following review of results**:
  - CrVI
  - Silica-Gel Clean-up

Please note that I am currently on leave, please include Casey O'Farrell on all correspondence, including issue of results.

Kind Regards,

Emma Stephens (she/ her) | Senior Environmental Scientist
Direct **+61 3 9290 7094** | Business **+61 3 9290 7000** | Mobile **+61 458 499 700** | emma.stephens@tetratech.com
I am available Monday, Tuesday, Wednesday and Thursday

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From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Thursday, 24 November 2022 4:01 PM
To: Stephens, Emma <Emma.Stephens@tetratech.com>
Cc: Flanagan, Jack <JACK.FLANAGAN@tetratech.com>
Subject: Attention: Eurofins Sample Receipt Advice - Report 944217 : Site WSA SDT (292575-1)

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Dear Valued Client,

Sample logged on hold. Please confirm analysis/suites required.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | Environment Testing Analytical Services Manager as soon as possible to make certain that they get changed.

Regards
Lisa Zulic
Sample Receipt

Eurofins | Environmental Testing
179 Magowar Rd
Girraween, NSW 2145
Phone: +61 02 9900 8421
Email: EnviroSampleNSW@eurofins.com
Website:[http:///]environment.eurofins.com.au

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eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	4/52 Industrial Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield East NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	PO Box 60 Wickham 2293
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	Tel: +61 2 4968 8448
NATA# 1261 Site# 1254	NATA# 1261 Site# 1254	NATA# 1261 Site# 18217		NATA# 1261 Site# 20794	NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	Coffey Environments Pty Ltd VIC
Contact name:	Emma Stephens
Project name:	WSA SDT
Project ID:	292575-1
Turnaround time:	5 Day
Date/Time received	Nov 23, 2022 4:00 PM
Eurofins reference	944217

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Analysis amended as requested in email.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Harry Bacalis on phone : or by email: HarryBacalis@eurofins.com

Results will be delivered electronically via email to Emma Stephens - emma.stephens@tetratech.com.

Note: A copy of these results will also be delivered to the general Coffey Environments Pty Ltd VIC email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Coffey Environments Pty Ltd VIC
Address: Level 1, 436 Johnston Street
Abbotsford
VIC 3067

Project Name: WSA SDT
Project ID: 292575-1

Order No.:
Report #: 944217
Phone: 03 9290 7000
Fax:

Received: Nov 23, 2022 4:00 PM
Due: Nov 30, 2022
Priority: 5 Day
Contact Name: Emma Stephens

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Monocyclic Aromatic Hydrocarbons	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X	X	X				X	X	X	X			X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
External Laboratory																												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																							
1	QC2_221122_JF	Nov 22, 2022		Water	S22-No0058704	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

eurofins | Environment Testing

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Coffey Environments Pty Ltd VIC
Level 1, 436 Johnston Street
Abbotsford
VIC 3067

Attention: **Emma Stephens**

Report **944217-W**
Project name WSA SDT
Project ID 292575-1
Received Date Nov 23, 2022

Client Sample ID			**QC2_221122_JF**
Sample Matrix			**Water**
Eurofins Sample No.			**S22-No0058704**
Date Sampled			**Nov 22, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	94
Monocyclic Aromatic Hydrocarbons			
Benzene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	94
Toluene-d8 (surr.)	1	%	82

Client Sample ID			QC2_221122_JF
Sample Matrix			Water
Eurofins Sample No.			S22-No0058704
Date Sampled			Nov 22, 2022
Test/Reference	LOR	Unit	
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.005	mg/L	< 0.005
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001

Client Sample ID			QC2_221122_JF
Sample Matrix			Water
Eurofins Sample No.			S22-No0058704
Date Sampled			Nov 22, 2022
Test/Reference	LOR	Unit	
Volatile Organics			
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	94
Toluene-d8 (surr.)	1	%	82
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	62
p-Terphenyl-d14 (surr.)	1	%	146
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002

Client Sample ID			QC2_221122_JF
Sample Matrix			Water
Eurofins Sample No.			S22-No0058704
Date Sampled			Nov 22, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	INT
Tetrachloro-m-xylene (surr.)	1	%	115
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	INT

Client Sample ID			QC2_221122_JF
Sample Matrix			Water
Eurofins Sample No.			S22-No0058704
Date Sampled			Nov 22, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.05
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003
2-Fluorobiphenyl (surr.)	1	%	62
2-Methylnaphthalene	0.005	mg/L	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.05
2-Nitroaniline	0.005	mg/L	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01
2-Picoline	0.005	mg/L	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Tribromophenol (surr.)	1	%	95
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
2.6-Dinitrotoluene	0.005	mg/L	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005
4-Nitrophenol	0.03	mg/L	< 0.03
4.4'-DDD	0.005	mg/L	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.5
a-HCH	0.005	mg/L	< 0.005
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Acetophenone	0.005	mg/L	< 0.005
Aldrin	0.005	mg/L	< 0.005

Client Sample ID			QC2_221122_JF
Sample Matrix			Water
Eurofins Sample No.			S22-No0058704
Date Sampled			Nov 22, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
Aniline	0.005	mg/L	< 0.005
Anthracene	0.001	mg/L	< 0.001
b-HCH	0.005	mg/L	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005
Chrysene	0.001	mg/L	< 0.001
d-HCH	0.005	mg/L	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005
Dieldrin	0.005	mg/L	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005
Diphenylamine	0.005	mg/L	< 0.005
Endosulfan I	0.005	mg/L	< 0.005
Endosulfan II	0.005	mg/L	< 0.005
Endosulfan sulphate	0.005	mg/L	< 0.005
Endrin	0.005	mg/L	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005
Endrin ketone	0.005	mg/L	< 0.005
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
g-HCH (Lindane)	0.005	mg/L	< 0.005
Heptachlor	0.005	mg/L	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Methoxychlor	0.005	mg/L	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005
Naphthalene	0.001	mg/L	< 0.001
Nitrobenzene	0.005	mg/L	< 0.005
Nitrobenzene-d5 (surr.)	1	%	142

Client Sample ID			QC2_221122_JF
Sample Matrix			Water
Eurofins Sample No.			S22-No0058704
Date Sampled			Nov 22, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
Pentachlorobenzene	0.005	mg/L	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005
Pentachlorophenol	0.01	mg/L	< 0.01
Phenanthrene	0.001	mg/L	< 0.001
Phenol	0.003	mg/L	< 0.003
Phenol-d6 (surr.)	1	%	44
Pronamide	0.005	mg/L	< 0.005
Pyrene	0.001	mg/L	< 0.001
Trifluralin	0.005	mg/L	< 0.005
Ammonia (as N)	0.01	mg/L	4.0
Chloride	1	mg/L	3700
Conductivity (at 25 °C)	10	uS/cm	8600
Nitrate & Nitrite (as N)	0.05	mg/L	1.5
Nitrate (as N)	0.02	mg/L	1.3
Nitrite (as N)	0.02	mg/L	0.18
pH (at 25 °C)	0.1	pH Units	5.5
Phosphate total (as P)	0.01	mg/L	0.31
Phosphorus reactive (as P)	0.05	mg/L	< 0.05
Sulphate (as SO4)	2	mg/L	200
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	4600
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	< 0.2
Total Organic Carbon	5	mg/L	16
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	< 20
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	< 20
Heavy Metals			
Aluminium	0.05	mg/L	3.3
Aluminium (filtered)	0.05	mg/L	2.1
Arsenic	0.001	mg/L	0.004
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	0.0003
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.002
Chromium (filtered)	0.001	mg/L	< 0.01
Cobalt	0.001	mg/L	0.11
Cobalt (filtered)	0.001	mg/L	0.098
Copper	0.001	mg/L	0.017
Copper (filtered)	0.001	mg/L	0.013
Iron	0.05	mg/L	1.9
Iron (filtered)	0.05	mg/L	< 0.5
Lead	0.001	mg/L	0.010
Lead (filtered)	0.001	mg/L	0.006
Manganese	0.005	mg/L	0.042
Manganese (filtered)	0.005	mg/L	< 0.05

Client Sample ID			QC2_221122_JF
Sample Matrix			Water
Eurofins Sample No.			S22-No0058704
Date Sampled			Nov 22, 2022
Test/Reference	LOR	Unit	
Heavy Metals			
Mercury	0.0001	mg/L	0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.039
Nickel (filtered)	0.001	mg/L	0.030
Zinc	0.005	mg/L	0.16
Zinc (filtered)	0.005	mg/L	0.14
Alkali Metals			
Calcium	0.5	mg/L	2.3
Magnesium	0.5	mg/L	190
Potassium	0.5	mg/L	4.1
Sodium	0.5	mg/L	1900
Per- and Polyfluoroalkyl Substances (PFASs) - Short			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
13C2-6:2 FTSA (surr.)	1	%	124
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
18O2-PFHxS (surr.)	1	%	121
13C8-PFOS (surr.)	1	%	113
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
13C8-PFOA (surr.)	1	%	128
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Nov 29, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Nov 29, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Nov 29, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Nov 29, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Monocyclic Aromatic Hydrocarbons	Sydney	Nov 29, 2022	7 Days
- Method: E029/E016 BTEX			
Polycyclic Aromatic Hydrocarbons	Sydney	Nov 29, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Conductivity (at 25 °C)	Sydney	Nov 29, 2022	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	Nov 29, 2022	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Total Organic Carbon	Melbourne	Nov 29, 2022	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Heavy Metals	Sydney	Nov 29, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Sydney	Nov 29, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8	Sydney	Nov 29, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Nov 29, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Nov 29, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs) - Short	Sydney	Nov 29, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Volatile Organics	Sydney	Nov 29, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Semivolatile Organics	Sydney	Nov 29, 2022	7 Day
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
Organochlorine Pesticides	Sydney	Nov 29, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Nov 29, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	Dec 05, 2022	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Nov 29, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Nov 29, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Nov 29, 2022	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Sydney	Nov 29, 2022	28 Days
- Method: E052 Total Phosphate (as P)			
Phosphorus reactive (as P)	Sydney	Nov 29, 2022	28 Days

Description	Testing Site	Extracted	Holding Time
- Method: E052 Reactive phosphate (as P)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 05, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	Nov 29, 2022	28 Days
- Method: LTM-INO-4270 Anions by Ion Chromatography			
Sulphate (as SO4)	Sydney	Nov 29, 2022	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Melbourne	Nov 29, 2022	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Sydney	Nov 29, 2022	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Coffey Environments Pty Ltd VIC
Address: Level 1, 436 Johnston Street
Abbotsford
VIC 3067

Project Name: WSA SDT
Project ID: 292575-1

Order No.:
Report #: 944217
Phone: 03 9290 7000
Fax:

Received: Nov 23, 2022 4:00 PM
Due: Nov 30, 2022
Priority: 5 Day
Contact Name: Emma Stephens

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Monocyclic Aromatic Hydrocarbons	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X	X	X				X	X	X	X			X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
External Laboratory																												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																							
1	QC2_221122_JF	Nov 22, 2022		Water	S22-No0058704	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Monocyclic Aromatic Hydrocarbons							
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2.4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
4.4'-DDD	mg/L	< 0.005			0.005	Pass	
4.4'-DDE	mg/L	< 0.005			0.005	Pass	
4.4'-DDT	mg/L	< 0.005			0.005	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-HCH	mg/L	< 0.005			0.005	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
b-HCH	mg/L	< 0.005			0.005	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
d-HCH	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a.j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
g-HCH (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Nitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.05			0.05	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Sum of US EPA PFAS (PFOS + PFOA)*	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	109			70-130	Pass	
TRH C10-C14	%	117			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
TRH C6-C10	%	105			70-130	Pass	
TRH >C10-C16	%	116			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	90			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	94			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
o-Xylene	%	99			70-130	Pass	
Xylenes - Total*	%	100			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	101			70-130	Pass	
1.1.1-Trichloroethane	%	108			70-130	Pass	
1.2-Dichlorobenzene	%	109			70-130	Pass	
1.2-Dichloroethane	%	84			70-130	Pass	
Trichloroethene	%	101			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	113			70-130	Pass	
Acenaphthylene	%	111			70-130	Pass	
Anthracene	%	120			70-130	Pass	
Benz(a)anthracene	%	116			70-130	Pass	
Benzo(a)pyrene	%	129			70-130	Pass	
Benzo(b&j)fluoranthene	%	109			70-130	Pass	
Benzo(g.h.i)perylene	%	121			70-130	Pass	
Benzo(k)fluoranthene	%	84			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene	%	109			70-130	Pass	
Dibenz(a.h)anthracene	%	87			70-130	Pass	
Fluoranthene	%	126			70-130	Pass	
Fluorene	%	113			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	129			70-130	Pass	
Naphthalene	%	80			70-130	Pass	
Phenanthrene	%	112			70-130	Pass	
Pyrene	%	125			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	89			70-130	Pass	
4.4'-DDD	%	95			70-130	Pass	
4.4'-DDE	%	91			70-130	Pass	
4.4'-DDT	%	90			70-130	Pass	
a-HCH	%	97			70-130	Pass	
Aldrin	%	101			70-130	Pass	
b-HCH	%	88			70-130	Pass	
d-HCH	%	98			70-130	Pass	
Dieldrin	%	105			70-130	Pass	
Endosulfan I	%	97			70-130	Pass	
Endosulfan II	%	93			70-130	Pass	
Endosulfan sulphate	%	83			70-130	Pass	
Endrin	%	104			70-130	Pass	
Endrin aldehyde	%	96			70-130	Pass	
Endrin ketone	%	102			70-130	Pass	
g-HCH (Lindane)	%	98			70-130	Pass	
Heptachlor	%	101			70-130	Pass	
Heptachlor epoxide	%	95			70-130	Pass	
Hexachlorobenzene	%	88			70-130	Pass	
Methoxychlor	%	93			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	93			70-130	Pass	
Dimethoate	%	77			70-130	Pass	
Ethion	%	93			70-130	Pass	
Fenitrothion	%	93			70-130	Pass	
Methyl parathion	%	104			70-130	Pass	
Mevinphos	%	110			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	%	128			25-140	Pass	
1.2.4-Trichlorobenzene	%	84			70-130	Pass	
1.4-Dichlorobenzene	%	79			70-130	Pass	
2-Chlorophenol	%	104			25-140	Pass	
2-Methylphenol (o-Cresol)	%	106			25-140	Pass	
2-Nitrophenol	%	112			25-140	Pass	
2.4-Dichlorophenol	%	106			25-140	Pass	
2.4-Dimethylphenol	%	89			25-140	Pass	
2.4-Dinitrophenol	%	123			25-140	Pass	
2.4-Dinitrotoluene	%	120			70-130	Pass	
2.4.5-Trichlorophenol	%	104			25-140	Pass	
2.4.6-Trichlorophenol	%	84			25-140	Pass	
2.6-Dichlorophenol	%	102			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	100			25-140	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4-Chloro-3-methylphenol	%	108			25-140	Pass	
4-Nitrophenol	%	57			25-140	Pass	
Endrin aldehyde	%	73			70-130	Pass	
N-Nitrosodipropylamine	%	94			70-130	Pass	
Pentachlorophenol	%	100			25-140	Pass	
Phenol	%	68			25-140	Pass	
LCS - % Recovery							
Ammonia (as N)	%	98			70-130	Pass	
Conductivity (at 25 °C)	%	94			70-130	Pass	
Nitrate & Nitrite (as N)	%	109			70-130	Pass	
Nitrate (as N)	%	108			70-130	Pass	
Nitrite (as N)	%	91			70-130	Pass	
Phosphate total (as P)	%	95			70-130	Pass	
Phosphorus reactive (as P)	%	95			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	97			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	78			70-130	Pass	
Total Organic Carbon	%	89			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	97			70-130	Pass	
Total Alkalinity (as CaCO3)	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	93			80-120	Pass	
Aluminium (filtered)	%	96			80-120	Pass	
Arsenic	%	98			80-120	Pass	
Arsenic (filtered)	%	99			80-120	Pass	
Cadmium	%	93			80-120	Pass	
Cadmium (filtered)	%	99			80-120	Pass	
Chromium	%	98			80-120	Pass	
Chromium (filtered)	%	96			80-120	Pass	
Cobalt	%	96			80-120	Pass	
Cobalt (filtered)	%	103			80-120	Pass	
Copper	%	95			80-120	Pass	
Copper (filtered)	%	94			80-120	Pass	
Iron	%	95			80-120	Pass	
Iron (filtered)	%	96			80-120	Pass	
Lead	%	98			80-120	Pass	
Lead (filtered)	%	97			80-120	Pass	
Manganese	%	92			80-120	Pass	
Manganese (filtered)	%	96			80-120	Pass	
Mercury	%	114			80-120	Pass	
Mercury (filtered)	%	101			80-120	Pass	
Nickel	%	96			80-120	Pass	
Nickel (filtered)	%	96			80-120	Pass	
Zinc	%	106			80-120	Pass	
Zinc (filtered)	%	100			80-120	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	101			80-120	Pass	
Magnesium	%	116			80-120	Pass	
Potassium	%	111			80-120	Pass	
Sodium	%	120			80-120	Pass	
LCS - % Recovery							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Per- and Polyfluoroalkyl Substances (PFASs) - Short									
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)			%	101			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)			%	102			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	97			50-150	Pass	
Perfluorooctanoic acid (PFOA)			%	103			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	N22-No0058214	NCP	%	85			70-130	Pass	
TRH >C10-C16	N22-No0058214	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-No0057064	NCP	%	78			70-130	Pass	
Acenaphthylene	S22-No0057064	NCP	%	82			70-130	Pass	
Anthracene	S22-No0057064	NCP	%	78			70-130	Pass	
Benz(a)anthracene	S22-No0057064	NCP	%	80			70-130	Pass	
Benzo(a)pyrene	S22-No0057064	NCP	%	77			70-130	Pass	
Benzo(b&j)fluoranthene	S22-No0057064	NCP	%	76			70-130	Pass	
Benzo(g.h.i)perylene	S22-No0057064	NCP	%	83			70-130	Pass	
Benzo(k)fluoranthene	S22-No0057064	NCP	%	75			70-130	Pass	
Chrysene	S22-No0057064	NCP	%	74			70-130	Pass	
Dibenz(a.h)anthracene	S22-No0057064	NCP	%	79			70-130	Pass	
Fluoranthene	S22-No0057064	NCP	%	87			70-130	Pass	
Fluorene	S22-No0057064	NCP	%	84			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-No0057064	NCP	%	77			70-130	Pass	
Phenanthrene	S22-No0057064	NCP	%	80			70-130	Pass	
Pyrene	S22-No0057064	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-No0059038	NCP	%	87			70-130	Pass	
4.4'-DDD	S22-No0059038	NCP	%	85			70-130	Pass	
4.4'-DDE	S22-No0059038	NCP	%	89			70-130	Pass	
4.4'-DDT	S22-No0059038	NCP	%	76			70-130	Pass	
a-HCH	S22-No0059038	NCP	%	80			70-130	Pass	
Aldrin	S22-No0059038	NCP	%	90			70-130	Pass	
b-HCH	S22-No0059038	NCP	%	75			70-130	Pass	
d-HCH	S22-No0059038	NCP	%	81			70-130	Pass	
Dieldrin	S22-No0059038	NCP	%	96			70-130	Pass	
Endosulfan I	S22-No0059038	NCP	%	92			70-130	Pass	
Endosulfan II	S22-No0059038	NCP	%	86			70-130	Pass	
Endosulfan sulphate	S22-No0059038	NCP	%	75			70-130	Pass	
Endrin	S22-No0059038	NCP	%	89			70-130	Pass	
Endrin aldehyde	S22-No0059038	NCP	%	89			70-130	Pass	
Endrin ketone	S22-No0059038	NCP	%	91			70-130	Pass	
g-HCH (Lindane)	S22-No0059038	NCP	%	96			70-130	Pass	
Heptachlor	S22-No0059038	NCP	%	90			70-130	Pass	
Heptachlor epoxide	S22-No0059038	NCP	%	90			70-130	Pass	
Hexachlorobenzene	S22-No0059038	NCP	%	74			70-130	Pass	
Methoxychlor	S22-No0059038	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S22-No0059038	NCP	%	89			70-130	Pass	
Ethion	S22-No0059038	NCP	%	80			70-130	Pass	
Fenitrothion	S22-No0059038	NCP	%	74			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methyl parathion	S22-No0059038	NCP	%	78			70-130	Pass	
Mevinphos	S22-No0059038	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Semivolatile Organics				Result 1					
Endrin aldehyde	S22-No0059038	NCP	%	89			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	N22-No0058222	NCP	%	105			70-130	Pass	
Phosphate total (as P)	N22-No0058224	NCP	%	93			70-130	Pass	
Phosphorus reactive (as P)	R22-No0051550	NCP	%	105			70-130	Pass	
Sulphate (as SO4)	N22-No0058222	NCP	%	104			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M22-No0069556	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S22-No0062711	NCP	%	92			75-125	Pass	
Aluminium (filtered)	S22-No0058275	NCP	%	91			75-125	Pass	
Arsenic	S22-No0062711	NCP	%	99			75-125	Pass	
Arsenic (filtered)	S22-No0058275	NCP	%	107			75-125	Pass	
Cadmium	S22-No0062711	NCP	%	92			75-125	Pass	
Cadmium (filtered)	S22-No0058275	NCP	%	102			75-125	Pass	
Chromium	S22-No0062711	NCP	%	96			75-125	Pass	
Chromium (filtered)	S22-No0058275	NCP	%	94			75-125	Pass	
Cobalt	S22-No0062711	NCP	%	98			75-125	Pass	
Cobalt (filtered)	S22-No0058275	NCP	%	91			75-125	Pass	
Copper	S22-No0062711	NCP	%	94			75-125	Pass	
Copper (filtered)	S22-No0058275	NCP	%	90			75-125	Pass	
Iron	S22-No0062711	NCP	%	90			75-125	Pass	
Iron (filtered)	R22-No0054142	NCP	%	83			75-125	Pass	
Lead	S22-No0062711	NCP	%	99			75-125	Pass	
Lead (filtered)	S22-No0058275	NCP	%	88			75-125	Pass	
Manganese	S22-No0062711	NCP	%	88			75-125	Pass	
Manganese (filtered)	R22-No0054142	NCP	%	89			75-125	Pass	
Mercury	S22-No0062711	NCP	%	112			75-125	Pass	
Mercury (filtered)	S22-No0058275	NCP	%	93			75-125	Pass	
Nickel	S22-No0062711	NCP	%	94			75-125	Pass	
Nickel (filtered)	S22-No0058275	NCP	%	86			75-125	Pass	
Zinc	S22-No0062711	NCP	%	99			75-125	Pass	
Zinc (filtered)	S22-No0058275	NCP	%	103			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S22-No0062711	NCP	%	101			75-125	Pass	
Magnesium	S22-No0062711	NCP	%	111			75-125	Pass	
Potassium	S22-No0062711	NCP	%	110			75-125	Pass	
Sodium	S22-No0062711	NCP	%	110			75-125	Pass	
Spike - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1					
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-No0069103	NCP	%	105			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S22-No0069103	NCP	%	108			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-No0049325	NCP	mg/L	1.1	1.2	8.9	30%	Pass	
TRH C10-C14	N22-No0058213	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	N22-No0058213	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	N22-No0058213	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Naphthalene	S22-No0049325	NCP	mg/L	0.01	0.01	4.9	30%	Pass	
TRH C6-C10	S22-No0049325	NCP	mg/L	1.4	1.5	6.8	30%	Pass	
TRH >C10-C16	N22-No0058213	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	N22-No0058213	NCP	mg/L	0.1	< 0.1	190	30%	Fail	Q15
TRH >C34-C40	N22-No0058213	NCP	mg/L	0.1	< 0.1	110	30%	Fail	Q15
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-No0049325	NCP	mg/L	0.042	0.044	6.1	30%	Pass	
Toluene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S22-No0049325	NCP	mg/L	0.034	0.038	10	30%	Pass	
m&p-Xylenes	S22-No0049325	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-No0049325	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Monocyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Isopropyl benzene (Cumene)	S22-No0049325	NCP	mg/L	0.022	0.024	9.0	30%	Pass	
Styrene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S22-No0049325	NCP	mg/L	0.004	0.004	5.2	30%	Pass	
1.2-Dichloropropane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S22-No0049325	NCP	mg/L	0.002	0.002	8.9	30%	Pass	
1.3-Dichlorobenzene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S22-No0049325	NCP	mg/L	0.005	0.006	5.0	30%	Pass	
1.4-Dichlorobenzene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorotoluene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S22-No0049325	NCP	mg/L	0.002	0.002	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Chloroethane	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloroform	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1.2-Dichloroethene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Iodomethane	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Tetrachloroethene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S22-No0049325	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	S22-No0049325	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S22-No0067960	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	S22-No0063752	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	S22-No0063752	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Hexachlorobenzene	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	S22-No0067960	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	S22-No0067960	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	S22-No0067960	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	S22-No0067960	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	S22-No0067960	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	S22-No0067960	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	S22-No0067960	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	S22-No0067960	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Chlorophenol	S22-No0067960	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S22-No0067960	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	S22-No0067960	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dichlorophenol	S22-No0067960	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dimethylphenol	S22-No0067960	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S22-No0067960	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2.4.5-Trichlorophenol	S22-No0067960	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S22-No0067960	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S22-No0067960	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S22-No0067960	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Chloro-3-methylphenol	S22-No0067960	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Nitrophenol	S22-No0067960	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
Endrin aldehyde	S22-No0067960	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorophenol	S22-No0067960	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Phenol	S22-No0067960	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M22-No0055575	NCP	mg/L	2100	2100	1.9	30%	Pass	
Conductivity (at 25 °C)	R22-No0054145	NCP	uS/cm	890	880	<1	30%	Pass	
Nitrate & Nitrite (as N)	M22-No0055575	NCP	mg/L	< 100	< 100	<1	30%	Pass	
Nitrate (as N)	M22-No0055575	NCP	mg/L	< 40	< 40	<1	30%	Pass	
Nitrite (as N)	M22-No0055575	NCP	mg/L	< 40	< 40	<1	30%	Pass	
Phosphate total (as P)	R22-No0054139	NCP	mg/L	3.2	3.2	2.8	30%	Pass	
Phosphorus reactive (as P)	R22-No0054139	NCP	mg/L	3.3	3.3	<1	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	N22-No0057711	NCP	mg/L	210	200	3.8	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M22-No0063656	NCP	mg/L	< 2	< 2	<1	30%	Pass	
Total Organic Carbon	M22-No0068690	NCP	mg/L	5.2	5.8	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	N22-No0058214	NCP	mg/L	1.5	1.2	25	30%	Pass	
Aluminium (filtered)	R22-No0054141	NCP	mg/L	5.4	5.2	4.2	30%	Pass	
Arsenic	N22-No0058214	NCP	mg/L	0.002	0.002	<1	30%	Pass	
Arsenic (filtered)	R22-No0054141	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	N22-No0058214	NCP	mg/L	0.0002	< 0.0002	40	30%	Fail	Q15
Cadmium (filtered)	R22-No0054141	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	N22-No0058214	NCP	mg/L	0.003	0.002	38	30%	Fail	Q15
Chromium (filtered)	R22-No0054141	NCP	mg/L	0.31	0.31	<1	30%	Pass	
Cobalt	N22-No0058214	NCP	mg/L	0.002	0.002	<1	30%	Pass	
Copper	N22-No0058214	NCP	mg/L	0.003	0.003	10	30%	Pass	
Copper (filtered)	S22-No0060353	NCP	mg/L	0.003	0.003	13	30%	Pass	
Iron	N22-No0058214	NCP	mg/L	2.1	1.6	25	30%	Pass	
Iron (filtered)	S22-No0060353	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	N22-No0058214	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S22-No0060353	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	N22-No0058214	NCP	mg/L	0.13	0.13	4.7	30%	Pass	
Manganese (filtered)	S22-No0060353	NCP	mg/L	0.083	0.082	<1	30%	Pass	
Mercury	S22-No0071304	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S22-No0060353	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	N22-No0058214	NCP	mg/L	0.006	0.004	32	30%	Fail	Q15
Nickel (filtered)	S22-No0059762	NCP	mg/L	0.003	0.003	1.00	30%	Pass	
Zinc	N22-No0058214	NCP	mg/L	0.005	< 0.005	10	30%	Pass	
Zinc (filtered)	S22-No0060353	NCP	mg/L	0.061	0.058	5.3	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	N22-No0058214	NCP	mg/L	150	160	3.0	30%	Pass	
Magnesium	N22-No0057715	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Potassium	N22-No0058214	NCP	mg/L	140	140	<1	30%	Pass	
Sodium	N22-No0057718	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-No0070724	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-No0070361	NCP	ug/L	0.02	0.02	1.7	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-No0070724	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-No0070724	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Harry Bacalis	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Dilani Samarakoon	Senior Analyst-Inorganic
Fang Yee Tan	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

754-SYDEN292575-4

Consigning Office: Chatswood

Report Results to: Jessica Paulsen — ~~Mobile:~~ emma.stephens@tetratech.com (emma) — Email: ~~jessica.paulsen@tetratech.com~~ jack.flanagan@tetratech.com

Invoices to: — ~~Phone:~~ casey.ofarrell@tetratech.com — Email: ~~sydney.labreports@coffey.com~~

Project No: ~~754-SYDEN301932~~ 754-SYDEN292575-4 — Task No:

Project Name: ~~Sydney Kilns~~ WSA - SBT — Laboratory: ~~Eurofins~~ ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): SH/373/22 V2

Special Instructions: Please forward QC4-301122-JP to Eurofins.

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Rapid Monitoring List	Baseline monitoring NHD & Insate Blank ex Field Sheet	Baseline monitoring Sites trip blank ex Field Sheet	
1	SBT-GW-3003_C	30/11/22	AM	W	7P, 3V, 1A	STD	X	X		
2	SBT-GW-3003_b							X		
3	SBT-GW-3003-a							X		
4	SBT-GW-3006_W							X		
5	SBT-GW-3012_b							X		
6	SBT-GW-3012_C							X		
7	SBT-GW-3022							X		
8	SBT-GW-3012_a							X		
9	BH207		PM					X		
10	BH209							X		
11	~~QC3~~ QC3-301122-JP							X		
—	QC4-301122-JP							X		
12	RB-301122-JP							X		
13	TB-301122-JP							X	X	
								X		
								X		

Environmental Division Sydney
Work Order Reference
ES2243342

Telephone : + 61-2-8784 8555

Forward to Eurofins

RELINQUISHED BY		RECEIVED BY	
Name: Jack Flanagan	Date: 30/11/22	Name: Thach Le	Date: 30/11/22
Coffey	Time:	Company: ALS	Time: 1744
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Eurofins: 2:34PM, 5/12/22 counter, chilled @ 7.7°C A.B #94777

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

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www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	Emma Stephens
Project name:	WSA-SBT
Project ID:	754-SYDEN292575-4
Turnaround time:	5 Day
Date/Time received	Dec 5, 2022 2:34 PM
Eurofins reference	947717

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- **N/A** Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Harry Bacalis on phone : or by email: HarryBacalis@eurofins.com

Results will be delivered electronically via email to Emma Stephens - emma.stephens@tetratech.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

Global Leader - Results you can trust

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 947717
Phone: 03 9290 7000
Fax:

Received: Dec 5, 2022 2:34 PM
Due: Dec 12, 2022
Priority: 5 Day
Contact Name: Emma Stephens

Project Name: WSA-SBT
Project ID: 754-SYDEN292575-4

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Monocyclic Aromatic Hydrocarbons	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X	X		X	X		X	X	X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X			X	X		X	X	X	X	X	X	X	X
External Laboratory																												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																							
1	QC34-301122-JP	Nov 30, 2022		Water	S22-De0012514	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Attention: **Emma Stephens**

Report **947717-W**
Project name WSA-SBT
Project ID 754-SYDEN292575-4
Received Date Dec 05, 2022

Client Sample ID			**QC34-301122-JP**
Sample Matrix			**Water**
Eurofins Sample No.			**S22-De0012514**
Date Sampled			**Nov 30, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	106
Monocyclic Aromatic Hydrocarbons			
Benzene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	106
Toluene-d8 (surr.)	1	%	104

Client Sample ID			QC34-301122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012514
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.005	mg/L	< 0.005
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001

Client Sample ID			QC34-301122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012514
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Volatile Organics			
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	106
Toluene-d8 (surr.)	1	%	104
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	139
p-Terphenyl-d14 (surr.)	1	%	84
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002

Client Sample ID			QC34-301122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012514
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	82
Tetrachloro-m-xylene (surr.)	1	%	95
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	95

Client Sample ID			QC34-301122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012514
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.005
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003
2-Fluorobiphenyl (surr.)	1	%	139
2-Methylnaphthalene	0.005	mg/L	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.005
2-Nitroaniline	0.005	mg/L	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01
2-Picoline	0.005	mg/L	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Tribromophenol (surr.)	1	%	100
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
2.6-Dinitrotoluene	0.005	mg/L	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005
4-Nitrophenol	0.03	mg/L	< 0.03
4.4'-DDD	0.005	mg/L	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005
a-HCH	0.005	mg/L	< 0.005
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Acetophenone	0.005	mg/L	< 0.005
Aldrin	0.005	mg/L	< 0.005

Client Sample ID			QC34-301122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012514
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
Aniline	0.005	mg/L	< 0.005
Anthracene	0.001	mg/L	< 0.001
b-HCH	0.005	mg/L	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005
Chrysene	0.001	mg/L	< 0.001
d-HCH	0.005	mg/L	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005
Dieldrin	0.005	mg/L	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005
Diphenylamine	0.005	mg/L	< 0.005
Endosulfan I	0.005	mg/L	< 0.005
Endosulfan II	0.005	mg/L	< 0.005
Endosulfan sulphate	0.005	mg/L	< 0.005
Endrin	0.005	mg/L	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005
Endrin ketone	0.005	mg/L	< 0.005
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
g-HCH (Lindane)	0.005	mg/L	< 0.005
Heptachlor	0.005	mg/L	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Methoxychlor	0.005	mg/L	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005
Naphthalene	0.001	mg/L	< 0.001
Nitrobenzene	0.05	mg/L	< 0.05
Nitrobenzene-d5 (surr.)	1	%	53

Client Sample ID			QC34-301122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012514
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
Pentachlorobenzene	0.005	mg/L	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005
Pentachlorophenol	0.01	mg/L	< 0.01
Phenanthrene	0.001	mg/L	< 0.001
Phenol	0.003	mg/L	< 0.003
Phenol-d6 (surr.)	1	%	69
Pronamide	0.005	mg/L	< 0.005
Pyrene	0.001	mg/L	< 0.001
Trifluralin	0.005	mg/L	< 0.005
Ammonia (as N)	0.01	mg/L	< 0.01
Chloride	1	mg/L	1100
Conductivity (at 25 °C)	10	uS/cm	3100
Nitrate & Nitrite (as N)	0.05	mg/L	1.8
Nitrate (as N)	0.02	mg/L	1.8
Nitrite (as N)	0.02	mg/L	< 0.02
pH (at 25 °C)	0.1	pH Units	7.9
Phosphate total (as P)	0.01	mg/L	0.07
Phosphorus reactive (as P)	0.05	mg/L	< 0.05
Sulphate (as SO4)	2	mg/L	100
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	1800
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.9
Total Nitrogen (as N)*	0.1	mg/L	2.7
Total Organic Carbon	5	mg/L	9.4
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	330
Carbonate Alkalinity (as CaCO3)	10	mg/L	37
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	370
Heavy Metals			
Aluminium	0.05	mg/L	0.66
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	0.010
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.011
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	0.002
Cobalt (filtered)	0.001	mg/L	< 0.001
Copper	0.001	mg/L	0.35
Copper (filtered)	0.001	mg/L	0.059
Iron	0.05	mg/L	6.8
Iron (filtered)	0.05	mg/L	< 0.05
Lead	0.001	mg/L	0.003
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	0.18
Manganese (filtered)	0.005	mg/L	0.074

Client Sample ID			QC34-301122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012514
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Heavy Metals			
Mercury	0.0001	mg/L	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.083
Nickel (filtered)	0.001	mg/L	0.059
Zinc	0.005	mg/L	0.12
Zinc (filtered)	0.005	mg/L	0.044
Alkali Metals			
Calcium	0.5	mg/L	70
Magnesium	0.5	mg/L	90
Potassium	0.5	mg/L	14
Sodium	0.5	mg/L	590
Per- and Polyfluoroalkyl Substances (PFASs) - Short			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
13C2-6:2 FTSA (surr.)	1	%	53
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
18O2-PFHxS (surr.)	1	%	62
13C8-PFOS (surr.)	1	%	62
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
13C8-PFOA (surr.)	1	%	51
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 13, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 13, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Monocyclic Aromatic Hydrocarbons	Sydney	Dec 13, 2022	7 Days
- Method: E029/E016 BTEX			
Polycyclic Aromatic Hydrocarbons	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Conductivity (at 25 °C)	Sydney	Dec 13, 2022	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	Dec 13, 2022	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Total Organic Carbon	Melbourne	Dec 13, 2022	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Heavy Metals	Sydney	Dec 13, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Sydney	Dec 13, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8	Sydney	Dec 13, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Dec 13, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Dec 13, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs) - Short	Sydney	Dec 13, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Volatile Organics	Sydney	Dec 13, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Semivolatile Organics	Melbourne	Dec 13, 2022	7 Days
- Method: USEPA SW 846 8270			
Suite B14: OCP/OPP			
Organochlorine Pesticides	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	Dec 13, 2022	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Dec 13, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Dec 13, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Dec 13, 2022	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Sydney	Dec 13, 2022	28 Days
- Method: E052 Total Phosphate (as P)			

Description	Testing Site	Extracted	Holding Time
Phosphorus reactive (as P)	Sydney	Dec 13, 2022	28 Days
- Method: E052 Reactive phosphate (as P)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 13, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	Dec 13, 2022	28 Days
- Method: LTM-INO-4270 Anions by Ion Chromatography			
Sulphate (as SO4)	Sydney	Dec 13, 2022	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Melbourne	Dec 13, 2022	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Sydney	Dec 13, 2022	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 947717
Phone: 03 9290 7000
Fax:

Received: Dec 5, 2022 2:34 PM
Due: Dec 12, 2022
Priority: 5 Day
Contact Name: Emma Stephens

Project Name: WSA-SBT
Project ID: 754-SYDEN292575-4

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Monocyclic Aromatic Hydrocarbons	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X	X		X	X		X	X	X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X			X	X		X	X	X	X	X	X	X	X
External Laboratory																												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																							
1	QC34-301122-JP	Nov 30, 2022		Water	S22-De0012514	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Monocyclic Aromatic Hydrocarbons							
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Chloride	mg/L	< 1			1	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	110			70-130	Pass	
TRH C6-C10	%	107			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	115			70-130	Pass	
Toluene	%	96			70-130	Pass	
Ethylbenzene	%	107			70-130	Pass	
m&p-Xylenes	%	121			70-130	Pass	
o-Xylene	%	110			70-130	Pass	
Xylenes - Total*	%	117			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	114			70-130	Pass	
1.1.1-Trichloroethane	%	105			70-130	Pass	
1.2-Dichlorobenzene	%	117			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.2-Dichloroethane			%	102			70-130	Pass	
Trichloroethene			%	93			70-130	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions									
Naphthalene			%	113			70-130	Pass	
LCS - % Recovery									
Chloride			%	125			70-130	Pass	
Sulphate (as SO4)			%	101			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Aluminium			%	97			80-120	Pass	
Arsenic			%	100			80-120	Pass	
Cadmium			%	97			80-120	Pass	
Chromium			%	95			80-120	Pass	
Cobalt			%	91			80-120	Pass	
Copper			%	92			80-120	Pass	
Iron			%	93			80-120	Pass	
Lead			%	95			80-120	Pass	
Manganese			%	94			80-120	Pass	
Mercury			%	109			80-120	Pass	
Nickel			%	90			80-120	Pass	
Zinc			%	93			80-120	Pass	
LCS - % Recovery									
Alkali Metals									
Calcium			%	103			80-120	Pass	
Magnesium			%	112			80-120	Pass	
Potassium			%	110			80-120	Pass	
Sodium			%	116			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
				Result 1					
Phosphorus reactive (as P)	S22-De0012514	CP	%	93			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Oc0046749	NCP	mg/L	0.06	0.05	18	30%	Pass	
TRH C10-C14	M22-De0026512	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M22-De0026512	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M22-De0026512	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S22-Oc0046749	NCP	mg/L	0.06	0.05	19	30%	Pass	
TRH >C10-C16	M22-De0026512	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M22-De0026512	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M22-De0026512	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-Oc0046749	NCP	mg/L	0.028	0.025	8.8	30%	Pass	
Ethylbenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-Oc0046749	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-Oc0046749	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Monocyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Isopropyl benzene (Cumene)	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorotoluene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloroform	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1.2-Dichloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Iodomethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Tetrachloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S22-Oc0046749	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	M22-De0029088	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	M22-De0029088	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	M22-De0029088	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	M22-De0029088	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	M22-De0029088	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
1-Chloronaphthalene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1-Naphthylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2-Dichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3-Trichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4-Trichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3-Dichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3.5-Trichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.4-Dichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chloronaphthalene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chlorophenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Methylnaphthalene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Naphthylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Nitroaniline	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Nitrophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2-Picoline	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dichlorophenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dimethylphenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	M22-De0029088	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2.4-Dinitrotoluene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.4.5-Trichlorophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.6-Dinitrotoluene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M22-De0029088	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
3-Methylcholanthrene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
3.3'-Dichlorobenzidine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Aminobiphenyl	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Bromophenyl phenyl ether	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chloro-3-methylphenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Chlorophenyl phenyl ether	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Nitrophenol	M22-De0029088	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
4.4'-DDD	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDE	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDT	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
a-HCH	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Acetophenone	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aldrin	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aniline	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
b-HCH	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Benzyl chloride	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroethoxy)methane	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Butyl benzyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
d-HCH	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-butyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-octyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenz(a.j)acridine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenzofuran	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dieldrin	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diethyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethylaminoazobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diphenylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan I	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan II	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan sulphate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin aldehyde	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin ketone	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
g-HCH (Lindane)	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor epoxide	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobutadiene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorocyclopentadiene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachloroethane	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Methoxychlor	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodibutylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodipropylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosopiperidine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nitrobenzene	M22-De0029088	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Pentachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachloronitrobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Phenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Pronamide	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Trifluralin	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M22-De0029047	NCP	mg/L	83	86	3.9	30%	Pass	
Chloride	S22-De0012514	CP	mg/L	1100	1100	5.7	30%	Pass	
Conductivity (at 25 °C)	R22-De0013375	NCP	uS/cm	6200	5900	4.6	30%	Pass	
Nitrate & Nitrite (as N)	M22-De0029047	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Nitrate (as N)	M22-De0029047	NCP	mg/L	< 0.5	< 0.2	<1	30%	Pass	
Nitrite (as N)	M22-De0029047	NCP	mg/L	< 0.2	< 0.2	<1	30%	Pass	
Phosphate total (as P)	S22-De0020333	NCP	mg/L	0.02	0.02	1.1	30%	Pass	
Phosphorus reactive (as P)	R22-De0010481	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Sulphate (as SO4)	S22-De0012514	CP	mg/L	100	110	2.5	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	S22-De0019331	NCP	mg/L	410	420	1.9	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M22-De0029047	NCP	mg/L	330	270	23	30%	Pass	
Total Organic Carbon	M22-De0029098	NCP	mg/L	45	57	23	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	M22-De0030246	NCP	mg/L	1700	1400	20	30%	Pass	
Carbonate Alkalinity (as CaCO3)	M22-De0030246	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	M22-De0030246	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	M22-De0030246	NCP	mg/L	1700	1400	20	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S22-De0012514	CP	mg/L	0.66	0.62	6.1	30%	Pass	
Aluminium (filtered)	R22-De0010504	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S22-De0012514	CP	mg/L	0.010	0.009	11	30%	Pass	
Arsenic (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S22-De0012514	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	R22-De0010504	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-De0012514	CP	mg/L	0.011	0.009	16	30%	Pass	
Chromium (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S22-De0012514	CP	mg/L	0.002	0.002	13	30%	Pass	
Cobalt (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S22-De0012514	CP	mg/L	0.35	0.31	11	30%	Pass	
Copper (filtered)	R22-De0010504	NCP	mg/L	0.001	< 0.001	47	30%	Fail	Q15
Iron	S22-De0012514	CP	mg/L	6.8	5.7	18	30%	Pass	
Iron (filtered)	R22-De0010504	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S22-De0012514	CP	mg/L	0.003	0.002	18	30%	Pass	
Lead (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S22-De0012514	CP	mg/L	0.18	0.14	21	30%	Pass	
Manganese (filtered)	R22-De0010504	NCP	mg/L	0.008	< 0.005	56	30%	Fail	Q15
Mercury	S22-De0012514	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	R22-De0010504	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-De0012514	CP	mg/L	0.083	0.080	4.4	30%	Pass	
Nickel (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S22-De0012514	CP	mg/L	0.12	0.11	5.1	30%	Pass	
Zinc (filtered)	R22-De0010504	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S22-De0012514	CP	mg/L	70	70	<1	30%	Pass	
Magnesium	S22-De0012514	CP	mg/L	90	91	1.3	30%	Pass	
Potassium	S22-De0012514	CP	mg/L	14	14	<1	30%	Pass	
Sodium	S22-De0012514	CP	mg/L	590	590	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Harry Bacalis	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Fang Yee Tan	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens ~~Jessica Paulsen~~

Invoices to:

email: emma.stephens@tetratech.com jack.flanagan@tetratech.com

~~Mobile:~~ ~~Casey~~ Email: ~~[illegible]~~

~~Phone:~~ casey.ofarrell@tetratech.com Email: esdat_labreports@coffey.com

Project No: ~~754-SYDEN201922~~ ~~754-SYDEN~~ 275-4 Task No:

Project Name: ~~Sydney Kilns~~ WSA Laboratory: ~~Eurofins~~ ALS

Sampler's Name: ~~Jack Flanagan~~ Jorja Pendlebury Project Manager: Emma Stephens

Quote number (if different to current quoted prices):

Special Instructions: Please forward QC6_011122_JP to Eurofins

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline monitoring suite	Baseline monitoring ~~[illegible]~~ Kinsuit blank extracted suite	Baseline monitoring trip blank extracted suite	Please forward to Eurofins
1	MW02	1/12/22	AM	W	7P, 3V, 1A	STD	X	X		
2	SBT-GW-4021							X		
3	MW01							X		
4	SBT-GW-1031							X		
5	SMGW-BH-A107							X		
6	SBT-CM-1022							X		
7	SBT-GW-1001							X		
8	QCS_011222_JP							X		
-	QC6-011222_JP							X		
9	RB_011222_JP				3P, 2V, 2A			X		
10	TB_011222_JP				3P, 2V, ~~2A~~			X	X	
11	SBT-GW-4014				7P, 3V, 1A		X	X		
12	SBT-GW-4017						X	X		
13	SBT-GW-4019						X	X		

Environmental Division Sydney
Work Order Reference
ES2243500

Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: ~~Jack Flanagan~~ Jorja Pendlebury	Date: 01/12/22	Name: Thanh Le	Date: 1/12/22
Coffey	Time: 13:00	Company: ALS	Time: 1710
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No. 947722

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Eurofins: courier, chilled @ 7.7°c 2:34PM 5/12/22 A.B.

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	- All Invoices
Project name:	WSA
Project ID:	754-SYDEN292575-4
Turnaround time:	5 Day
Date/Time received	Dec 5, 2022 2:34 PM
Eurofins reference	947722

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- **N/A** Custody Seals intact (if used).

Notes

Please confirm analysis.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Harry Bacalis on phone : or by email: HarryBacalis@eurofins.com

Results will be delivered electronically via email to - All Invoices - ABTF_ENVI_Invoices@coffey.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

Global Leader - Results you can trust

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 947722
Phone: 03 9290 7000
Fax:

Received: Dec 5, 2022 2:34 PM
Due: Dec 12, 2022
Priority: 5 Day
Contact Name: - All Invoices

Project Name: WSA
Project ID: 754-SYDEN292575-4

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Monocyclic Aromatic Hydrocarbons	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X	X	X	X	X		X	X	X	X			X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X			X	X		X	X	X	X	X	X	X	X
External Laboratory																												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																							
1	QC6-01122-JP	Nov 30, 2022		Water	S22-De0012569	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

eurofins | Environment Testing

Certificate of Analysis

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Emma Stephens**

Report **947722-W**
Project name WSA
Project ID 754-SYDEN292575-4
Received Date Dec 05, 2022

Client Sample ID			**QC6-01122-JP**
Sample Matrix			**Water**
Eurofins Sample No.			**S22-De0012569**
Date Sampled			**Nov 30, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	105
Monocyclic Aromatic Hydrocarbons			
Benzene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	105
Toluene-d8 (surr.)	1	%	108

Client Sample ID			QC6-01122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012569
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.005	mg/L	< 0.005
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001

Client Sample ID			QC6-01122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012569
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Volatile Organics			
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	105
Toluene-d8 (surr.)	1	%	108
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	62
p-Terphenyl-d14 (surr.)	1	%	52
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002

Client Sample ID			QC6-01122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012569
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	136
Tetrachloro-m-xylene (surr.)	1	%	137
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	114

Client Sample ID			QC6-01122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012569
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.005
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003
2-Fluorobiphenyl (surr.)	1	%	62
2-Methylnaphthalene	0.005	mg/L	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.005
2-Nitroaniline	0.005	mg/L	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01
2-Picoline	0.005	mg/L	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Tribromophenol (surr.)	1	%	96
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
2.6-Dinitrotoluene	0.005	mg/L	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005
4-Nitrophenol	0.03	mg/L	< 0.03
4.4'-DDD	0.005	mg/L	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005
a-HCH	0.005	mg/L	< 0.005
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Acetophenone	0.005	mg/L	< 0.005
Aldrin	0.005	mg/L	< 0.005
Aniline	0.005	mg/L	< 0.005

Client Sample ID			QC6-01122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012569
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
Anthracene	0.001	mg/L	< 0.001
b-HCH	0.005	mg/L	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005
Chrysene	0.001	mg/L	< 0.001
d-HCH	0.005	mg/L	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005
Dieldrin	0.005	mg/L	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005
Diphenylamine	0.005	mg/L	< 0.005
Endosulfan I	0.005	mg/L	< 0.005
Endosulfan II	0.005	mg/L	< 0.005
Endosulfan sulphate	0.005	mg/L	< 0.005
Endrin	0.005	mg/L	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005
Endrin ketone	0.005	mg/L	< 0.005
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
g-HCH (Lindane)	0.005	mg/L	< 0.005
Heptachlor	0.005	mg/L	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Methoxychlor	0.005	mg/L	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005
Naphthalene	0.001	mg/L	< 0.001
Nitrobenzene	0.05	mg/L	< 0.05
Nitrobenzene-d5 (surr.)	1	%	133
Pentachlorobenzene	0.005	mg/L	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005

Client Sample ID			QC6-01122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012569
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
Pentachlorophenol	0.01	mg/L	< 0.01
Phenanthrene	0.001	mg/L	< 0.001
Phenol	0.003	mg/L	< 0.003
Phenol-d6 (surr.)	1	%	121
Pronamide	0.005	mg/L	< 0.005
Pyrene	0.001	mg/L	< 0.001
Trifluralin	0.005	mg/L	< 0.005
Ammonia (as N)	0.01	mg/L	0.05
Chloride	1	mg/L	5800
Conductivity (at 25 °C)	10	uS/cm	15000
Nitrate & Nitrite (as N)	0.05	mg/L	0.57
Nitrate (as N)	0.02	mg/L	0.56
Nitrite (as N)	0.02	mg/L	< 0.02
pH (at 25 °C)	0.1	pH Units	7.6
Phosphate total (as P)	0.01	mg/L	0.13
Phosphorus reactive (as P)	0.05	mg/L	< 0.05
Sulphate (as SO4)	2	mg/L	530
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	11000
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.9
Total Nitrogen (as N)*	0.1	mg/L	3.47
Total Organic Carbon	5	mg/L	12
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	710
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	710
Heavy Metals			
Aluminium	0.05	mg/L	2.5
Aluminium (filtered)	0.05	mg/L	0.31
Arsenic	0.001	mg/L	0.007
Arsenic (filtered)	0.001	mg/L	0.001
Cadmium	0.0002	mg/L	0.0003
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.002
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	0.005
Cobalt (filtered)	0.001	mg/L	0.002
Copper	0.001	mg/L	0.026
Copper (filtered)	0.001	mg/L	0.004
Iron	0.05	mg/L	6.0
Iron (filtered)	0.05	mg/L	0.74
Lead	0.001	mg/L	0.005
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	1.6
Manganese (filtered)	0.005	mg/L	0.64
Mercury	0.0001	mg/L	0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.004

Client Sample ID			QC6-01122-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0012569
Date Sampled			Nov 30, 2022
Test/Reference	LOR	Unit	
Heavy Metals			
Nickel (filtered)	0.001	mg/L	0.001
Zinc	0.005	mg/L	0.020
Zinc (filtered)	0.005	mg/L	0.008
Alkali Metals			
Calcium	0.5	mg/L	210
Magnesium	0.5	mg/L	460
Potassium	0.5	mg/L	14
Sodium	0.5	mg/L	2800
Per- and Polyfluoroalkyl Substances (PFASs) - Short			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
13C2-6:2 FTSA (surr.)	1	%	179
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
18O2-PFHxS (surr.)	1	%	INT
13C8-PFOS (surr.)	1	%	INT
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
13C8-PFOA (surr.)	1	%	177
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 13, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 13, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Monocyclic Aromatic Hydrocarbons	Sydney	Dec 13, 2022	7 Days
- Method: E029/E016 BTEX			
Polycyclic Aromatic Hydrocarbons	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Conductivity (at 25 °C)	Sydney	Dec 13, 2022	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	Dec 13, 2022	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Total Organic Carbon	Melbourne	Dec 13, 2022	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Heavy Metals	Sydney	Dec 13, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Sydney	Dec 13, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8	Sydney	Dec 13, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Dec 13, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Dec 13, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs) - Short	Sydney	Dec 13, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Volatile Organics	Sydney	Dec 13, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Semivolatile Organics	Melbourne	Dec 13, 2022	7 Days
- Method: USEPA SW 846 8270			
Suite B14: OCP/OPP			
Organochlorine Pesticides	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Dec 13, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	Dec 13, 2022	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Dec 13, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Dec 13, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Dec 13, 2022	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Sydney	Dec 13, 2022	28 Days
- Method: E052 Total Phosphate (as P)			

Description	Testing Site	Extracted	Holding Time
Phosphorus reactive (as P)	Sydney	Dec 13, 2022	28 Days
- Method: E052 Reactive phosphate (as P)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 13, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	Dec 13, 2022	28 Days
- Method: LTM-INO-4270 Anions by Ion Chromatography			
Sulphate (as SO4)	Sydney	Dec 13, 2022	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Melbourne	Dec 13, 2022	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Sydney	Dec 13, 2022	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 947722
Phone: 03 9290 7000
Fax:

Received: Dec 5, 2022 2:34 PM
Due: Dec 12, 2022
Priority: 5 Day
Contact Name: - All Invoices

Project Name: WSA
Project ID: 754-SYDEN292575-4

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Monocyclic Aromatic Hydrocarbons	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X	X	X	X	X		X	X	X	X			X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X			X	X		X	X	X	X	X	X	X	X
External Laboratory																												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																							
1	QC6-01122-JP	Nov 30, 2022		Water	S22-De0012569	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Monocyclic Aromatic Hydrocarbons							
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2.4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
4.4'-DDD	mg/L	< 0.005			0.005	Pass	
4.4'-DDE	mg/L	< 0.005			0.005	Pass	
4.4'-DDT	mg/L	< 0.005			0.005	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-HCH	mg/L	< 0.005			0.005	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
b-HCH	mg/L	< 0.005			0.005	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
d-HCH	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a.j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
g-HCH (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Nitrobenzene	mg/L	< 0.05			0.05	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Sum of US EPA PFAS (PFOS + PFOA)*	ug/L	-			0.01	N/A	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	110			70-130	Pass	
TRH C10-C14	%	100			70-130	Pass	
TRH C6-C10	%	107			70-130	Pass	
TRH >C10-C16	%	104			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	73			70-130	Pass	
Toluene	%	96			70-130	Pass	
Ethylbenzene	%	74			70-130	Pass	
m&p-Xylenes	%	84			70-130	Pass	
o-Xylene	%	76			70-130	Pass	
Xylenes - Total*	%	81			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	114			70-130	Pass	
1.1.1-Trichloroethane	%	105			70-130	Pass	
1.2-Dichlorobenzene	%	80			70-130	Pass	
1.2-Dichloroethane	%	75			70-130	Pass	
Trichloroethene	%	93			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	76			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	123			70-130	Pass	
Acenaphthylene	%	115			70-130	Pass	
Anthracene	%	97			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	%	70			70-130	Pass	
Benzo(a)pyrene	%	98			70-130	Pass	
Benzo(b&j)fluoranthene	%	125			70-130	Pass	
Benzo(g.h.i)perylene	%	80			70-130	Pass	
Benzo(k)fluoranthene	%	70			70-130	Pass	
Chrysene	%	86			70-130	Pass	
Dibenz(a.h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	89			70-130	Pass	
Fluorene	%	109			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	82			70-130	Pass	
Naphthalene	%	104			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	90			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	103			70-130	Pass	
4.4'-DDD	%	81			70-130	Pass	
4.4'-DDE	%	89			70-130	Pass	
4.4'-DDT	%	86			70-130	Pass	
a-HCH	%	102			70-130	Pass	
Aldrin	%	97			70-130	Pass	
b-HCH	%	119			70-130	Pass	
d-HCH	%	109			70-130	Pass	
Dieldrin	%	91			70-130	Pass	
Endosulfan I	%	109			70-130	Pass	
Endosulfan II	%	106			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	101			70-130	Pass	
Endrin aldehyde	%	80			70-130	Pass	
Endrin ketone	%	107			70-130	Pass	
g-HCH (Lindane)	%	126			70-130	Pass	
Heptachlor	%	93			70-130	Pass	
Heptachlor epoxide	%	104			70-130	Pass	
Hexachlorobenzene	%	81			70-130	Pass	
Methoxychlor	%	77			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	112			70-130	Pass	
Dimethoate	%	99			70-130	Pass	
Ethion	%	116			70-130	Pass	
Fenitrothion	%	104			70-130	Pass	
Mevinphos	%	122			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	%	72			25-140	Pass	
2-Chlorophenol	%	119			25-140	Pass	
2-Methylphenol (o-Cresol)	%	104			25-140	Pass	
2-Nitrophenol	%	105			25-140	Pass	
2.4-Dichlorophenol	%	107			25-140	Pass	
2.4-Dimethylphenol	%	36			25-140	Pass	
2.4-Dinitrophenol	%	47			25-140	Pass	
2.4.5-Trichlorophenol	%	88			25-140	Pass	
2.4.6-Trichlorophenol	%	126			25-140	Pass	
2.6-Dichlorophenol	%	100			25-140	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
3&4-Methylphenol (m&p-Cresol)	%	106			25-140	Pass	
4-Chloro-3-methylphenol	%	117			25-140	Pass	
4-Nitrophenol	%	73			25-140	Pass	
Pentachlorophenol	%	71			25-140	Pass	
Phenol	%	49			25-140	Pass	
LCS - % Recovery							
Ammonia (as N)	%	104			70-130	Pass	
Chloride	%	125			70-130	Pass	
Nitrate & Nitrite (as N)	%	102			70-130	Pass	
Nitrate (as N)	%	102			70-130	Pass	
Nitrite (as N)	%	98			70-130	Pass	
Phosphate total (as P)	%	105			70-130	Pass	
Phosphorus reactive (as P)	%	97			70-130	Pass	
Sulphate (as SO4)	%	101			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	94			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	91			70-130	Pass	
Total Organic Carbon	%	103			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	114			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	97			80-120	Pass	
Aluminium (filtered)	%	98			80-120	Pass	
Arsenic	%	100			80-120	Pass	
Arsenic (filtered)	%	100			80-120	Pass	
Cadmium	%	97			80-120	Pass	
Cadmium (filtered)	%	93			80-120	Pass	
Chromium	%	95			80-120	Pass	
Chromium (filtered)	%	97			80-120	Pass	
Cobalt	%	91			80-120	Pass	
Cobalt (filtered)	%	95			80-120	Pass	
Copper	%	92			80-120	Pass	
Copper (filtered)	%	97			80-120	Pass	
Iron	%	93			80-120	Pass	
Iron (filtered)	%	95			80-120	Pass	
Lead	%	95			80-120	Pass	
Lead (filtered)	%	97			80-120	Pass	
Manganese	%	94			80-120	Pass	
Manganese (filtered)	%	95			80-120	Pass	
Mercury	%	109			80-120	Pass	
Mercury (filtered)	%	101			80-120	Pass	
Nickel	%	90			80-120	Pass	
Nickel (filtered)	%	95			80-120	Pass	
Zinc	%	93			80-120	Pass	
Zinc (filtered)	%	91			80-120	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	103			80-120	Pass	
Magnesium	%	112			80-120	Pass	
Potassium	%	110			80-120	Pass	
Sodium	%	116			80-120	Pass	
LCS - % Recovery							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)			%	108			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)			%	93			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	95			50-150	Pass	
Perfluorooctanoic acid (PFOA)			%	93			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	M22-De0029645	NCP	%	73			70-130	Pass	
TRH >C10-C16	M22-De0029645	NCP	%	74			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-Oc0046750	NCP	%	108			70-130	Pass	
Toluene	S22-Oc0046750	NCP	%	108			70-130	Pass	
Ethylbenzene	S22-Oc0046750	NCP	%	110			70-130	Pass	
m&p-Xylenes	S22-Oc0046750	NCP	%	114			70-130	Pass	
o-Xylene	S22-Oc0046750	NCP	%	112			70-130	Pass	
Xylenes - Total*	S22-Oc0046750	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1.1-Trichloroethane	S22-Oc0046750	NCP	%	97			70-130	Pass	
1.2-Dichlorobenzene	S22-Oc0046750	NCP	%	119			70-130	Pass	
1.2-Dichloroethane	S22-Oc0046750	NCP	%	107			70-130	Pass	
Trichloroethene	S22-Oc0046750	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S22-Oc0046750	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-De0029089	NCP	%	110			70-130	Pass	
Acenaphthylene	M22-De0029089	NCP	%	108			70-130	Pass	
Anthracene	M22-De0029089	NCP	%	99			70-130	Pass	
Benz(a)anthracene	M22-De0029089	NCP	%	102			70-130	Pass	
Benzo(a)pyrene	M22-De0029089	NCP	%	113			70-130	Pass	
Benzo(b&j)fluoranthene	M22-De0029089	NCP	%	103			70-130	Pass	
Benzo(g.h.i)perylene	M22-De0029089	NCP	%	121			70-130	Pass	
Benzo(k)fluoranthene	M22-De0029089	NCP	%	122			70-130	Pass	
Chrysene	M22-De0029089	NCP	%	121			70-130	Pass	
Dibenz(a.h)anthracene	M22-De0029089	NCP	%	73			70-130	Pass	
Fluoranthene	M22-De0029089	NCP	%	100			70-130	Pass	
Fluorene	M22-De0029089	NCP	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M22-De0029089	NCP	%	76			70-130	Pass	
Naphthalene	M22-De0029089	NCP	%	78			70-130	Pass	
Phenanthrene	M22-De0029089	NCP	%	101			70-130	Pass	
Pyrene	M22-De0029089	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Semivolatile Organics				Result 1					
2-Methyl-4.6-dinitrophenol	M22-De0029089	NCP	%	59			30-130	Pass	
2-Chlorophenol	M22-De0029089	NCP	%	95			30-130	Pass	
2-Methylphenol (o-Cresol)	M22-De0029089	NCP	%	92			30-130	Pass	
2-Nitrophenol	M22-De0029089	NCP	%	99			30-130	Pass	
2.4-Dichlorophenol	M22-De0029089	NCP	%	80			30-130	Pass	
2.4-Dimethylphenol	M22-De0029089	NCP	%	67			30-130	Pass	
2.4-Dinitrophenol	M22-De0029089	NCP	%	117			30-130	Pass	
2.4.5-Trichlorophenol	M22-De0029089	NCP	%	69			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4.6-Trichlorophenol	M22-De0029089	NCP	%	86			30-130	Pass	
2.6-Dichlorophenol	M22-De0029089	NCP	%	76			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M22-De0029089	NCP	%	107			30-130	Pass	
4-Chloro-3-methylphenol	M22-De0029089	NCP	%	113			30-130	Pass	
4-Nitrophenol	M22-De0029089	NCP	%	45			30-130	Pass	
Pentachlorophenol	M22-De0029089	NCP	%	62			30-130	Pass	
Phenol	M22-De0029089	NCP	%	68			30-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M22-De0026688	NCP	%	121			70-130	Pass	
Chloride	S22-De0010874	NCP	%	128			70-130	Pass	
Nitrate & Nitrite (as N)	M22-De0026688	NCP	%	74			70-130	Pass	
Phosphorus reactive (as P)	S22-De0012514	NCP	%	93			70-130	Pass	
Sulphate (as SO4)	S22-De0010874	NCP	%	118			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M22-De0028701	NCP	%	73			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S22-De0011077	NCP	%	101			75-125	Pass	
Aluminium (filtered)	R22-De0013290	NCP	%	93			75-125	Pass	
Arsenic	S22-De0011077	NCP	%	104			75-125	Pass	
Arsenic (filtered)	R22-De0013290	NCP	%	97			75-125	Pass	
Cadmium	S22-De0011077	NCP	%	99			75-125	Pass	
Cadmium (filtered)	R22-De0013290	NCP	%	89			75-125	Pass	
Chromium	S22-De0011077	NCP	%	99			75-125	Pass	
Chromium (filtered)	R22-De0013290	NCP	%	91			75-125	Pass	
Cobalt	S22-De0011077	NCP	%	97			75-125	Pass	
Cobalt (filtered)	R22-De0013290	NCP	%	91			75-125	Pass	
Copper	S22-De0011077	NCP	%	98			75-125	Pass	
Copper (filtered)	R22-De0013290	NCP	%	91			75-125	Pass	
Iron	S22-De0011077	NCP	%	92			75-125	Pass	
Iron (filtered)	R22-De0013290	NCP	%	90			75-125	Pass	
Lead	S22-De0011077	NCP	%	96			75-125	Pass	
Lead (filtered)	R22-De0013290	NCP	%	92			75-125	Pass	
Manganese	S22-De0011077	NCP	%	97			75-125	Pass	
Manganese (filtered)	R22-De0013290	NCP	%	87			75-125	Pass	
Mercury	S22-De0011077	NCP	%	101			75-125	Pass	
Mercury (filtered)	R22-De0013290	NCP	%	97			75-125	Pass	
Nickel	S22-De0011077	NCP	%	95			75-125	Pass	
Nickel (filtered)	R22-De0013290	NCP	%	89			75-125	Pass	
Zinc	S22-De0011077	NCP	%	83			75-125	Pass	
Zinc (filtered)	R22-De0013290	NCP	%	89			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S22-De0011077	NCP	%	101			75-125	Pass	
Magnesium	S22-De0011077	NCP	%	116			75-125	Pass	
Potassium	S22-De0011077	NCP	%	114			75-125	Pass	
Sodium	S22-De0011077	NCP	%	107			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Oc0046749	NCP	mg/L	0.06	0.05	18	30%	Pass	
TRH C10-C14	M22-De0026512	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M22-De0026512	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M22-De0026512	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C10	S22-Oc0046749	NCP	mg/L	0.06	0.05	19	30%	Pass	
TRH >C10-C16	M22-De0026512	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M22-De0026512	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M22-De0026512	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-Oc0046749	NCP	mg/L	0.028	0.025	8.8	30%	Pass	
Ethylbenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-Oc0046749	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-Oc0046749	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Monocyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Isopropyl benzene (Cumene)	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorotoluene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloroform	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1.2-Dichloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Dibromochloromethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Iodomethane	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Tetrachloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S22-Oc0046749	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	S22-Oc0046749	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S22-Oc0046749	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M22-De0029088	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	M22-De0029088	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	M22-De0029088	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	M22-De0029088	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	M22-De0029088	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	M22-De0029088	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	M22-De0029088	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	M22-De0029088	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
1-Chloronaphthalene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1-Naphthylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2-Dichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3-Trichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4-Trichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3-Dichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3.5-Trichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.4-Dichlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chloronaphthalene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chlorophenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Methylnaphthalene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Naphthylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Nitroaniline	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Nitrophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2-Picoline	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dichlorophenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dimethylphenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	M22-De0029088	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2.4-Dinitrotoluene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.4.5-Trichlorophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.6-Dinitrotoluene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M22-De0029088	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
3-Methylcholanthrene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3.3'-Dichlorobenzidine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Aminobiphenyl	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Bromophenyl phenyl ether	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chloro-3-methylphenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Chlorophenyl phenyl ether	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Nitrophenol	M22-De0029088	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
4.4'-DDD	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDE	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDT	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
a-HCH	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Acetophenone	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aldrin	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aniline	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
b-HCH	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Benzyl chloride	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroethoxy)methane	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Butyl benzyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
d-HCH	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-butyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-octyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenz(a.j)acridine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenzofuran	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dieldrin	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diethyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethyl phthalate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethylaminoazobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diphenylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan I	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan II	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan sulphate	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin aldehyde	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin ketone	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
g-HCH (Lindane)	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor epoxide	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobutadiene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
Hexachlorocyclopentadiene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachloroethane	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Methoxychlor	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodibutylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodipropylamine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosopiperidine	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nitrobenzene	M22-De0029088	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Pentachlorobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachloronitrobenzene	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorophenol	M22-De0029088	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Phenol	M22-De0029088	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Pronamide	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Trifluralin	M22-De0029088	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M22-De0029047	NCP	mg/L	83	86	3.9	30%	Pass	
Chloride	S22-De0012514	NCP	mg/L	1100	1100	5.7	30%	Pass	
Conductivity (at 25 °C)	R22-De0013375	NCP	uS/cm	6200	5900	4.6	30%	Pass	
Nitrate & Nitrite (as N)	M22-De0029047	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Nitrate (as N)	M22-De0029047	NCP	mg/L	< 0.5	< 0.2	<1	30%	Pass	
Nitrite (as N)	M22-De0029047	NCP	mg/L	< 0.2	< 0.2	<1	30%	Pass	
Phosphate total (as P)	S22-De0020333	NCP	mg/L	0.02	0.02	1.1	30%	Pass	
Phosphorus reactive (as P)	R22-De0010504	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Sulphate (as SO4)	S22-De0012514	NCP	mg/L	100	110	2.5	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	S22-De0019331	NCP	mg/L	410	420	1.9	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M22-De0032940	NCP	mg/L	82	67	20	30%	Pass	
Total Organic Carbon	M22-De0029098	NCP	mg/L	45	57	23	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	M22-De0030246	NCP	mg/L	1700	1400	20	30%	Pass	
Carbonate Alkalinity (as CaCO3)	M22-De0030246	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	M22-De0030246	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	M22-De0030246	NCP	mg/L	1700	1400	20	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S22-De0012569	CP	mg/L	2.5	2.5	3.2	30%	Pass	
Aluminium (filtered)	R22-De0010504	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S22-De0012514	NCP	mg/L	0.010	0.009	11	30%	Pass	
Arsenic (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S22-De0012514	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	R22-De0010504	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-De0012514	NCP	mg/L	0.011	0.009	16	30%	Pass	
Chromium (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S22-De0012569	CP	mg/L	0.005	0.005	1.7	30%	Pass	
Cobalt (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S22-De0012514	NCP	mg/L	0.35	0.31	11	30%	Pass	
Copper (filtered)	R22-De0010504	NCP	mg/L	0.001	< 0.001	47	30%	Fail	Q15
Iron	S22-De0012569	CP	mg/L	6.0	5.8	2.0	30%	Pass	
Iron (filtered)	R22-De0010504	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S22-De0012514	NCP	mg/L	0.003	0.002	18	30%	Pass	
Lead (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S22-De0012569	CP	mg/L	1.6	1.6	2.3	30%	Pass	
Manganese (filtered)	R22-De0010504	NCP	mg/L	0.008	< 0.005	56	30%	Fail	Q15

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	S22-De0012514	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	R22-De0010504	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-De0012514	NCP	mg/L	0.083	0.080	4.4	30%	Pass	
Nickel (filtered)	R22-De0010504	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S22-De0012514	NCP	mg/L	0.12	0.11	5.1	30%	Pass	
Zinc (filtered)	R22-De0010504	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S22-De0012569	CP	mg/L	210	210	<1	30%	Pass	
Magnesium	S22-De0012569	CP	mg/L	460	460	1.1	30%	Pass	
Potassium	S22-De0012569	CP	mg/L	14	14	<1	30%	Pass	
Sodium	S22-De0012569	CP	mg/L	2800	2800	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Harry Bacalis	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Fang Yee Tan	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood
Report Results to: Emma Stephens
Invoices to: general.admin@tetratech.com

Email: emma.stephens@tetratech.com
Email: casey.ofarrel@tetratech.com
Email: jack.flanagan@tetratech.com
Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4
Task No:
Project Name: WSA SBT
Laboratory: ALS
Sampler's Name: Jack Flanagan
Project Manager: Emma Stephens
Quote number (if different to current quoted prices): SY/247/22 V2
Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
1	SBT-GW-1024	7/12/22	2.00	Water	Bottles	Std (5-day)		✓												
2	SMGW-BH-C324			Water	Bottles	Std (5-day)		✓												
3	SMGW-BH-C321			Water	Bottles	Std (5-day)		✓												
4	SMGW-BH-C332			Water	Bottles	Std (5-day)		✓												
5	SMGW-BH-C330			Water	Bottles	Std (5-day)		✓												
6	SMGW-BH-D109s			Water	Bottles	Std (5-day)		✓												
7	SMGW-BH-C320			Water	Bottles	Std (5-day)		✓												
8	QC7_071222_JF			Water	Bottles	Std (5-day)		✓												
9	QC8_071222_JF			Water	Bottles	Std (5-day)		✓												
	RB_071222_JF			Water	Bottles	Std (5-day)		✓												
				Water	Bottles	Std (5-day)					✓					✓				Send to Eurofins
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

RELINQUISHED BY

Name: JF
Coffey
Date: 7/12/22
Time: 2.00

Name:
Company:
Date:
Time:

RECEIVED BY

Name:
Company: ALS
Date: 7/12/22
Time: 1730

Name: R Phillips
Company: Eurofins
Date: 8/12/22
Time: 1:36pm
8.7°C

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Subcon / Forward Lab / Split WO
Lab / Analysis: QC8 → Eurofins
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

Environmental Division Sydney
Work Order Reference
ES2244263

HT
#948785

Telephone : + 61-2-8784 9555

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www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	4/52 Industrial Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield East NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	PO Box 60 Wickham 2293
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	Tel: +61 2 4968 8448
NATA# 1261 Site# 1254	NATA# 1261 Site# 1254	NATA# 1261 Site# 18217		NATA# 1261 Site# 20794	NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	Emma Stephens
Project name:	WSA SBT
Project ID:	SYDGE292575-4
Turnaround time:	10 Day
Date/Time received	Dec 14, 2022 3:52 PM
Eurofins reference	948785

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Harry Bacalis on phone : or by email: HarryBacalis@eurofins.com

Results will be delivered electronically via email to Emma Stephens - emma.stephens@tetratech.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 948785
Phone: 03 9290 7000
Fax:

Received: Dec 14, 2022 3:52 PM
Due: Dec 30, 2022
Priority: 10 Day
Contact Name: Emma Stephens

Project Name: WSA SBT
Project ID: SYDGE292575-4

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Monocyclic Aromatic Hydrocarbons	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
External Laboratory																												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																							
1	QC8_071222_JF	Dec 07, 2022		Water	S22-De0021422	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Attention: **Emma Stephens**

Report **948785-W**
Project name WSA SBT
Project ID SYDGE292575-4
Received Date Dec 14, 2022

Client Sample ID			**QC8_071222_JF**
Sample Matrix			**Water**
Eurofins Sample No.			**S22-De0021422**
Date Sampled			**Dec 07, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	2.1
TRH C10-C14	0.05	mg/L	0.19
TRH C15-C28	0.1	mg/L	0.4
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	0.59
TRH C6-C10	0.02	mg/L	2.2
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	2.2
TRH >C10-C16	0.05	mg/L	0.30
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	0.3
TRH >C16-C34	0.1	mg/L	0.4
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	0.7
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	113
Monocyclic Aromatic Hydrocarbons			
Benzene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	113
Toluene-d8 (surr.)	1	%	81

Client Sample ID			QC8_071222_JF
Sample Matrix			Water
Eurofins Sample No.			S22-De0021422
Date Sampled			Dec 07, 2022
Test/Reference	LOR	Unit	
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	0.38
2-Propanone (Acetone)	0.005	mg/L	0.097
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.005	mg/L	< 0.005
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001

Client Sample ID			QC8_071222_JF
Sample Matrix			Water
Eurofins Sample No.			S22-De0021422
Date Sampled			Dec 07, 2022
Test/Reference	LOR	Unit	
Volatile Organics			
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	113
Toluene-d8 (surr.)	1	%	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	77
p-Terphenyl-d14 (surr.)	1	%	INT
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002

Client Sample ID			QC8_071222_JF
Sample Matrix			Water
Eurofins Sample No.			S22-De0021422
Date Sampled			Dec 07, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	INT
Tetrachloro-m-xylene (surr.)	1	%	INT
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	INT

Client Sample ID			QC8_071222_JF
Sample Matrix			Water
Eurofins Sample No.			S22-De0021422
Date Sampled			Dec 07, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.5
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003
2-Fluorobiphenyl (surr.)	1	%	77
2-Methylnaphthalene	0.005	mg/L	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.5
2-Nitroaniline	0.005	mg/L	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01
2-Picoline	0.005	mg/L	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Tribromophenol (surr.)	1	%	74
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
2.6-Dinitrotoluene	0.005	mg/L	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.01
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005
4-Nitrophenol	0.03	mg/L	< 0.06
4.4'-DDD	0.005	mg/L	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005
a-HCH	0.005	mg/L	< 0.005
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Acetophenone	0.005	mg/L	< 0.005
Aldrin	0.005	mg/L	< 0.005

Client Sample ID			QC8_071222_JF
Sample Matrix			Water
Eurofins Sample No.			S22-De0021422
Date Sampled			Dec 07, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
Aniline	0.005	mg/L	< 0.01
Anthracene	0.001	mg/L	< 0.001
b-HCH	0.005	mg/L	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005
Chrysene	0.001	mg/L	< 0.001
d-HCH	0.005	mg/L	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005
Dieldrin	0.005	mg/L	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005
Diphenylamine	0.005	mg/L	< 0.005
Endosulfan I	0.005	mg/L	< 0.005
Endosulfan II	0.005	mg/L	< 0.005
Endosulfan sulphate	0.005	mg/L	< 0.005
Endrin	0.005	mg/L	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005
Endrin ketone	0.005	mg/L	< 0.005
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
g-HCH (Lindane)	0.005	mg/L	< 0.005
Heptachlor	0.005	mg/L	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Methoxychlor	0.005	mg/L	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005
Naphthalene	0.001	mg/L	< 0.001
Nitrobenzene	0.005	mg/L	< 0.005
Nitrobenzene-d5 (surr.)	1	%	INT

Client Sample ID			QC8_071222_JF
Sample Matrix			Water
Eurofins Sample No.			S22-De0021422
Date Sampled			Dec 07, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
Pentachlorobenzene	0.005	mg/L	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005
Pentachlorophenol	0.01	mg/L	< 0.01
Phenanthrene	0.001	mg/L	< 0.001
Phenol	0.003	mg/L	< 0.003
Phenol-d6 (surr.)	1	%	39
Pronamide	0.005	mg/L	< 0.005
Pyrene	0.001	mg/L	< 0.001
Trifluralin	0.005	mg/L	< 0.005
Ammonia (as N)	0.01	mg/L	0.09
Chloride	1	mg/L	3600
Conductivity (at 25 °C)	10	uS/cm	5900
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05
Nitrate (as N)	0.02	mg/L	0.02
Nitrite (as N)	0.02	mg/L	< 0.02
pH (at 25 °C)	0.1	pH Units	6.9
Phosphate total (as P)	0.01	mg/L	0.02
Phosphorus reactive (as P)	0.05	mg/L	< 0.05
Sulphate (as SO4)	2	mg/L	460
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	3900
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.7
Total Nitrogen (as N)*	0.1	mg/L	1.7
Total Organic Carbon	5	mg/L	22
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	41
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	41
Heavy Metals			
Aluminium	0.05	mg/L	8.4
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	0.013
Arsenic (filtered)	0.001	mg/L	0.005
Cadmium	0.0002	mg/L	0.0004
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.015
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	0.068
Cobalt (filtered)	0.001	mg/L	0.050
Copper	0.001	mg/L	0.045
Copper (filtered)	0.001	mg/L	< 0.001
Iron	0.05	mg/L	16
Iron (filtered)	0.05	mg/L	6.9
Lead	0.001	mg/L	0.017
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	1.7
Manganese (filtered)	0.005	mg/L	1.6

Client Sample ID			QC8_071222_JF
Sample Matrix			Water
Eurofins Sample No.			S22-De0021422
Date Sampled			Dec 07, 2022
Test/Reference	LOR	Unit	
Heavy Metals			
Mercury	0.0001	mg/L	0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.039
Nickel (filtered)	0.001	mg/L	0.017
Zinc	0.005	mg/L	0.097
Zinc (filtered)	0.005	mg/L	0.023
Alkali Metals			
Calcium	0.5	mg/L	77
Magnesium	0.5	mg/L	180
Potassium	0.5	mg/L	8.5
Sodium	0.5	mg/L	1600
Per- and Polyfluoroalkyl Substances (PFASs) - Short			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
13C2-6:2 FTSA (surr.)	1	%	152
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.26
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.31
18O2-PFHxS (surr.)	1	%	115
13C8-PFOS (surr.)	1	%	113
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.24
13C8-PFOA (surr.)	1	%	128
Sum (PFHxS + PFOS)*	0.01	ug/L	0.57
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.55
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.81

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Dec 16, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 15, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 16, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 15, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Monocyclic Aromatic Hydrocarbons	Sydney	Dec 15, 2022	7 Days
- Method: E029/E016 BTEX			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 16, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Conductivity (at 25 °C)	Sydney	Dec 16, 2022	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	Dec 16, 2022	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Total Organic Carbon	Melbourne	Dec 29, 2022	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Heavy Metals	Sydney	Dec 16, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Sydney	Dec 16, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8	Sydney	Dec 16, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Dec 16, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Dec 16, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs) - Short	Sydney	Dec 16, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Volatile Organics	Sydney	Dec 15, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Semivolatile Organics	Sydney	Dec 16, 2022	7 Day
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
Organochlorine Pesticides	Sydney	Dec 16, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Dec 16, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Sydney	Dec 16, 2022	28 Days
- Method: LTM-INO-4200 Ammonia by Discrete Analyser			
Nitrate & Nitrite (as N)	Melbourne	Dec 29, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Dec 29, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Dec 29, 2022	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Sydney	Dec 16, 2022	28 Days
- Method: E052 Total Phosphate (as P)			
Phosphorus reactive (as P)	Sydney	Dec 16, 2022	28 Days

Description	Testing Site	Extracted	Holding Time
- Method: E052 Reactive phosphate (as P)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 29, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	Dec 16, 2022	28 Days
- Method: LTM-INO-4270 Anions by Ion Chromatography			
Sulphate (as SO4)	Sydney	Dec 16, 2022	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Melbourne	Dec 29, 2022	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Sydney	Dec 16, 2022	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay, Southbank VIC 3006

Order No.:
Report #: 948785
Phone: 03 9290 7000
Fax:

Received: Dec 14, 2022 3:52 PM
Due: Dec 30, 2022
Priority: 10 Day
Contact Name: Emma Stephens

Project Name: WSA SBT
Project ID: SYDGE292575-4

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Monocyclic Aromatic Hydrocarbons	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
External Laboratory																												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																							
1	QC8_071222_JF	Dec 07, 2022		Water	S22-De0021422	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Monocyclic Aromatic Hydrocarbons							
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2.4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
4.4'-DDD	mg/L	< 0.005			0.005	Pass	
4.4'-DDE	mg/L	< 0.005			0.005	Pass	
4.4'-DDT	mg/L	< 0.005			0.005	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-HCH	mg/L	< 0.005			0.005	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
b-HCH	mg/L	< 0.005			0.005	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
d-HCH	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a.j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
g-HCH (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Nitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	102			70-130	Pass	
TRH C10-C14	%	92			70-130	Pass	
TRH C6-C10	%	99			70-130	Pass	
TRH >C10-C16	%	87			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	117			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	120			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
o-Xylene	%	122			70-130	Pass	
Xylenes - Total*	%	105			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	90			70-130	Pass	
1.1.1-Trichloroethane	%	103			70-130	Pass	
1.2-Dichlorobenzene	%	124			70-130	Pass	
1.2-Dichloroethane	%	122			70-130	Pass	
Trichloroethene	%	106			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	113			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	109			70-130	Pass	
Acenaphthylene	%	107			70-130	Pass	
Anthracene	%	101			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	%	91			70-130	Pass	
Benzo(a)pyrene	%	91			70-130	Pass	
Benzo(b&j)fluoranthene	%	102			70-130	Pass	
Benzo(g.h.i)perylene	%	116			70-130	Pass	
Benzo(k)fluoranthene	%	96			70-130	Pass	
Chrysene	%	92			70-130	Pass	
Dibenz(a.h)anthracene	%	130			70-130	Pass	
Fluoranthene	%	108			70-130	Pass	
Fluorene	%	111			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	124			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
Phenanthrene	%	72			70-130	Pass	
Pyrene	%	75			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	95			70-130	Pass	
4.4'-DDD	%	87			70-130	Pass	
4.4'-DDE	%	99			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-HCH	%	97			70-130	Pass	
Aldrin	%	111			70-130	Pass	
b-HCH	%	85			70-130	Pass	
d-HCH	%	90			70-130	Pass	
Dieldrin	%	104			70-130	Pass	
Endosulfan I	%	106			70-130	Pass	
Endosulfan II	%	89			70-130	Pass	
Endosulfan sulphate	%	89			70-130	Pass	
Endrin	%	96			70-130	Pass	
Endrin aldehyde	%	101			70-130	Pass	
Endrin ketone	%	87			70-130	Pass	
g-HCH (Lindane)	%	108			70-130	Pass	
Heptachlor	%	90			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	94			70-130	Pass	
Methoxychlor	%	99			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	98			70-130	Pass	
Dimethoate	%	97			70-130	Pass	
Ethion	%	79			70-130	Pass	
Fenitrothion	%	94			70-130	Pass	
Methyl parathion	%	105			70-130	Pass	
Mevinphos	%	109			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	%	63			25-140	Pass	
2-Chlorophenol	%	50			25-140	Pass	
2-Methylphenol (o-Cresol)	%	80			25-140	Pass	
2-Nitrophenol	%	76			25-140	Pass	
2.4-Dichlorophenol	%	79			25-140	Pass	
2.4-Dimethylphenol	%	68			25-140	Pass	
2.4-Dinitrophenol	%	66			25-140	Pass	
2.4-Dinitrotoluene	%	96			70-130	Pass	
2.4.5-Trichlorophenol	%	70			25-140	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4.6-Trichlorophenol	%	55			25-140	Pass	
2.6-Dichlorophenol	%	53			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	81			25-140	Pass	
4-Chloro-3-methylphenol	%	58			25-140	Pass	
4-Nitrophenol	%	38			25-140	Pass	
N-Nitrosodipropylamine	%	79			70-130	Pass	
Pentachlorophenol	%	39			25-140	Pass	
Phenol	%	56			25-140	Pass	
LCS - % Recovery							
Chloride	%	110			70-130	Pass	
Conductivity (at 25 °C)	%	87			70-130	Pass	
Nitrate & Nitrite (as N)	%	105			70-130	Pass	
Nitrate (as N)	%	105			70-130	Pass	
Nitrite (as N)	%	99			70-130	Pass	
Phosphate total (as P)	%	96			70-130	Pass	
Phosphorus reactive (as P)	%	100			70-130	Pass	
Sulphate (as SO4)	%	107			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	92			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	92			70-130	Pass	
Total Organic Carbon	%	84			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	86			70-130	Pass	
Total Alkalinity (as CaCO3)	%	115			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	113			80-120	Pass	
Aluminium (filtered)	%	103			80-120	Pass	
Arsenic	%	104			80-120	Pass	
Arsenic (filtered)	%	99			80-120	Pass	
Cadmium	%	105			80-120	Pass	
Cadmium (filtered)	%	100			80-120	Pass	
Chromium	%	107			80-120	Pass	
Chromium (filtered)	%	107			80-120	Pass	
Cobalt	%	100			80-120	Pass	
Cobalt (filtered)	%	105			80-120	Pass	
Copper	%	96			80-120	Pass	
Copper (filtered)	%	104			80-120	Pass	
Iron	%	103			80-120	Pass	
Iron (filtered)	%	104			80-120	Pass	
Lead	%	103			80-120	Pass	
Lead (filtered)	%	102			80-120	Pass	
Manganese	%	103			80-120	Pass	
Manganese (filtered)	%	103			80-120	Pass	
Mercury	%	108			80-120	Pass	
Mercury (filtered)	%	103			80-120	Pass	
Nickel	%	112			80-120	Pass	
Nickel (filtered)	%	106			80-120	Pass	
Zinc	%	104			80-120	Pass	
Zinc (filtered)	%	104			80-120	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	108			80-120	Pass	
Magnesium	%	99			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Potassium			%	100			80-120	Pass	
Sodium			%	117			80-120	Pass	
LCS - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short									
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)			%	110			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)			%	106			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	101			50-150	Pass	
Perfluorooctanoic acid (PFOA)			%	104			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S22-De0035067	NCP	%	85			70-130	Pass	
TRH >C10-C16	S22-De0035067	NCP	%	82			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-Oc0046750	NCP	%	108			70-130	Pass	
Toluene	S22-Oc0046750	NCP	%	108			70-130	Pass	
Ethylbenzene	S22-Oc0046750	NCP	%	110			70-130	Pass	
m&p-Xylenes	S22-Oc0046750	NCP	%	114			70-130	Pass	
o-Xylene	S22-Oc0046750	NCP	%	112			70-130	Pass	
Xylenes - Total*	S22-Oc0046750	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1.1-Trichloroethane	S22-Oc0046750	NCP	%	97			70-130	Pass	
1.2-Dichlorobenzene	S22-Oc0046750	NCP	%	119			70-130	Pass	
1.2-Dichloroethane	S22-Oc0046750	NCP	%	107			70-130	Pass	
Trichloroethene	S22-Oc0046750	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S22-Oc0046750	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-De0025946	NCP	%	82			70-130	Pass	
Acenaphthylene	S22-De0025946	NCP	%	79			70-130	Pass	
Anthracene	S22-De0025946	NCP	%	91			70-130	Pass	
Benz(a)anthracene	S22-De0025946	NCP	%	82			70-130	Pass	
Benzo(a)pyrene	S22-De0025946	NCP	%	84			70-130	Pass	
Benzo(b&j)fluoranthene	S22-De0025946	NCP	%	93			70-130	Pass	
Benzo(g.h.i)perylene	S22-De0025946	NCP	%	105			70-130	Pass	
Benzo(k)fluoranthene	S22-De0025946	NCP	%	83			70-130	Pass	
Chrysene	S22-De0025946	NCP	%	100			70-130	Pass	
Dibenz(a.h)anthracene	S22-De0025946	NCP	%	88			70-130	Pass	
Fluoranthene	S22-De0025946	NCP	%	95			70-130	Pass	
Fluorene	S22-De0025946	NCP	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-De0025946	NCP	%	85			70-130	Pass	
Phenanthrene	S22-De0025946	NCP	%	97			70-130	Pass	
Pyrene	S22-De0025946	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-De0025946	NCP	%	87			70-130	Pass	
4.4'-DDD	S22-De0025946	NCP	%	79			70-130	Pass	
4.4'-DDE	S22-De0025946	NCP	%	88			70-130	Pass	
4.4'-DDT	S22-De0025946	NCP	%	87			70-130	Pass	
a-HCH	S22-De0025946	NCP	%	82			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin	S22-De0025946	NCP	%	92			70-130	Pass	
b-HCH	S22-De0025946	NCP	%	78			70-130	Pass	
d-HCH	S22-De0025946	NCP	%	79			70-130	Pass	
Dieldrin	S22-De0025946	NCP	%	89			70-130	Pass	
Endosulfan I	S22-De0025946	NCP	%	99			70-130	Pass	
Endosulfan II	S22-De0025946	NCP	%	80			70-130	Pass	
Endosulfan sulphate	S22-De0025946	NCP	%	78			70-130	Pass	
Endrin	S22-De0025946	NCP	%	91			70-130	Pass	
Endrin aldehyde	S22-De0025946	NCP	%	82			70-130	Pass	
Endrin ketone	S22-De0025946	NCP	%	78			70-130	Pass	
g-HCH (Lindane)	S22-De0025946	NCP	%	88			70-130	Pass	
Heptachlor	S22-De0025946	NCP	%	80			70-130	Pass	
Heptachlor epoxide	S22-De0025946	NCP	%	87			70-130	Pass	
Hexachlorobenzene	S22-De0025946	NCP	%	79			70-130	Pass	
Methoxychlor	S22-De0025946	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S22-De0025946	NCP	%	88			70-130	Pass	
Dimethoate	S22-De0025946	NCP	%	95			70-130	Pass	
Ethion	S22-De0025946	NCP	%	73			70-130	Pass	
Fenitrothion	S22-De0025946	NCP	%	83			70-130	Pass	
Methyl parathion	S22-De0025946	NCP	%	92			70-130	Pass	
Mevinphos	S22-De0025946	NCP	%	101			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S22-De0036796	NCP	%	94			70-130	Pass	
Nitrate & Nitrite (as N)	M22-De0048781	NCP	%	102			70-130	Pass	
Nitrate (as N)	M22-De0048781	NCP	%	101			70-130	Pass	
Phosphate total (as P)	R22-De0032657	NCP	%	95			70-130	Pass	
Phosphorus reactive (as P)	R22-De0029139	NCP	%	74			70-130	Pass	
Sulphate (as SO4)	S22-De0021422	CP	%	95			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	S22-De0051897	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S22-De0038358	NCP	%	109			75-125	Pass	
Aluminium (filtered)	S22-De0035827	NCP	%	106			75-125	Pass	
Arsenic	S22-De0038358	NCP	%	101			75-125	Pass	
Arsenic (filtered)	S22-De0035827	NCP	%	100			75-125	Pass	
Cadmium	S22-De0038358	NCP	%	97			75-125	Pass	
Cadmium (filtered)	S22-De0035827	NCP	%	95			75-125	Pass	
Chromium	S22-De0038358	NCP	%	98			75-125	Pass	
Chromium (filtered)	S22-De0035827	NCP	%	95			75-125	Pass	
Cobalt	S22-De0038358	NCP	%	96			75-125	Pass	
Cobalt (filtered)	S22-De0035827	NCP	%	94			75-125	Pass	
Copper	S22-De0038358	NCP	%	91			75-125	Pass	
Copper (filtered)	S22-De0035827	NCP	%	91			75-125	Pass	
Iron	S22-De0038358	NCP	%	100			75-125	Pass	
Iron (filtered)	S22-De0035827	NCP	%	95			75-125	Pass	
Lead	S22-De0038358	NCP	%	97			75-125	Pass	
Lead (filtered)	S22-De0035827	NCP	%	95			75-125	Pass	
Manganese	S22-De0038358	NCP	%	90			75-125	Pass	
Manganese (filtered)	S22-De0035827	NCP	%	93			75-125	Pass	
Mercury	S22-De0038358	NCP	%	105			75-125	Pass	
Mercury (filtered)	S22-De0035827	NCP	%	100			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	S22-De0038358	NCP	%	93			75-125	Pass	
Nickel (filtered)	S22-De0035827	NCP	%	91			75-125	Pass	
Zinc	S22-De0038358	NCP	%	93			75-125	Pass	
Zinc (filtered)	S22-De0035827	NCP	%	89			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S22-De0038358	NCP	%	98			75-125	Pass	
Magnesium	S22-De0038358	NCP	%	116			75-125	Pass	
Potassium	S22-De0038358	NCP	%	112			75-125	Pass	
Sodium	S22-De0038358	NCP	%	89			75-125	Pass	
Spike - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1					
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-De0047097	NCP	%	101			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-De0047097	NCP	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S22-De0047097	NCP	%	94			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-De0031966	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S22-De0025955	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S22-De0025955	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S22-De0025955	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S22-De0031966	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S22-De0025955	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S22-De0025955	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S22-De0025955	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-De0031966	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-De0031966	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Monocyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Isopropyl benzene (Cumene)	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.3-Dichlorobenzene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorotoluene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloroform	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1.2-Dichloroethene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Iodomethane	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Tetrachloroethene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S22-De0031966	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	S22-De0031966	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S22-De0031966	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S22-De0021422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	S22-De0025945	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	S22-De0025945	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	S22-De0025945	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	S22-De0025945	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	S22-De0025945	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	S22-De0025945	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	S22-De0025945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	S22-De0021422	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
1-Chloronaphthalene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1-Naphthylamine	S22-De0021422	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3-Trichlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4-Trichlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3-Dichlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3.5-Trichlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.4-Dichlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chloronaphthalene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chlorophenol	S22-De0021422	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Methylnaphthalene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S22-De0021422	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Naphthylamine	S22-De0021422	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
2-Nitroaniline	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Nitrophenol	S22-De0021422	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2-Picoline	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	S22-De0021422	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dichlorophenol	S22-De0021422	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dimethylphenol	S22-De0021422	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S22-De0021422	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2.4-Dinitrotoluene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.4.5-Trichlorophenol	S22-De0021422	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S22-De0021422	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S22-De0021422	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.6-Dinitrotoluene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S22-De0021422	CP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
3-Methylcholanthrene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3.3'-Dichlorobenzidine	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Aminobiphenyl	S22-De0021422	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Bromophenyl phenyl ether	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chloro-3-methylphenol	S22-De0021422	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Chlorophenyl phenyl ether	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Nitrophenol	S22-De0021422	CP	mg/L	< 0.06	< 0.06	<1	30%	Pass	
4.4'-DDD	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDE	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDT	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
a-HCH	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Acetophenone	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aldrin	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aniline	S22-De0021422	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
b-HCH	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Benzyl chloride	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroethoxy)methane	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Butyl benzyl phthalate	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
d-HCH	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-butyl phthalate	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-octyl phthalate	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
Dibenz(a.j)acridine	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenzofuran	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dieldrin	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diethyl phthalate	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethyl phthalate	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethylaminoazobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diphenylamine	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan I	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan II	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan sulphate	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin aldehyde	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin ketone	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
g-HCH (Lindane)	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor epoxide	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobutadiene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorocyclopentadiene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachloroethane	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Methoxychlor	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodibutylamine	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodipropylamine	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosopiperidine	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nitrobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachloronitrobenzene	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorophenol	S22-De0021422	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Phenol	S22-De0021422	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Pronamide	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Trifluralin	S22-De0021422	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S22-De0021422	CP	mg/L	3600	3300	9.7	30%	Pass	
Conductivity (at 25 °C)	R22-De0029148	NCP	uS/cm	1000	1000	<1	30%	Pass	
Nitrate & Nitrite (as N)	M22-De0052129	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrate (as N)	M22-De0052129	NCP	mg/L	0.03	0.04	24	30%	Pass	
Nitrite (as N)	M22-De0052129	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	R22-De0032670	NCP	mg/L	0.07	< 0.01	170	30%	Fail	Q15
Phosphorus reactive (as P)	R22-De0029138	NCP	mg/L	0.06	0.06	<1	30%	Pass	
Sulphate (as SO4)	S22-De0021422	CP	mg/L	460	400	15	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	S22-De0036277	NCP	mg/L	840	830	1.2	30%	Pass	
Total Kjeldahl Nitrogen (as N)	S22-De0051896	NCP	mg/L	1600	1600	4.1	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	B22-De0055857	NCP	mg/L	35	38	7.8	30%	Pass	
Carbonate Alkalinity (as CaCO3)	B22-De0055857	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	B22-De0055857	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	B22-De0055857	NCP	mg/L	35	38	7.8	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S22-De0028860	NCP	mg/L	0.17	0.19	12	30%	Pass	
Aluminium (filtered)	S22-De0034651	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S22-De0028860	NCP	mg/L	0.002	0.002	23	30%	Pass	
Arsenic (filtered)	S22-De0034651	NCP	mg/L	0.002	0.002	10.0	30%	Pass	
Cadmium	S22-De0028904	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S22-De0034651	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S22-De0034651	NCP	mg/L	0.017	0.018	4.2	30%	Pass	
Cobalt	S22-De0028860	NCP	mg/L	0.001	0.001	4.6	30%	Pass	
Cobalt (filtered)	S22-De0034651	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S22-De0028860	NCP	mg/L	0.007	0.007	3.0	30%	Pass	
Copper (filtered)	S22-De0034651	NCP	mg/L	0.003	0.003	15	30%	Pass	
Iron	S22-De0028860	NCP	mg/L	0.13	0.13	1.0	30%	Pass	
Iron (filtered)	S22-De0034651	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S22-De0028860	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S22-De0034651	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S22-De0028860	NCP	mg/L	0.073	0.075	2.1	30%	Pass	
Manganese (filtered)	S22-De0034651	NCP	mg/L	0.040	0.040	1.1	30%	Pass	
Mercury	S22-De0028860	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S22-De0034307	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S22-De0034651	NCP	mg/L	0.011	0.010	5.1	30%	Pass	
Zinc (filtered)	S22-De0034651	NCP	mg/L	0.005	0.007	19	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S22-De0028860	NCP	mg/L	66	66	<1	30%	Pass	
Magnesium	S22-De0028860	NCP	mg/L	75	76	<1	30%	Pass	
Potassium	S22-De0028860	NCP	mg/L	14	15	3.2	30%	Pass	
Sodium	S22-De0028860	NCP	mg/L	490	490	<1	30%	Pass	
Duplicate									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-De0044274	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-De0050934	NCP	ug/L	0.02	0.02	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-De0050934	NCP	ug/L	0.05	0.04	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-De0044274	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Savini Suduweli	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Dilani Samarakoon	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Inorganic
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 9224

coffey

Consigning Office: chatswood email
Report Results to: emma stephens
Invoices to: general.admin@tetratech.com
Mobile: emma.stephens@tetratech.com Email: jack.flanagan@tetratech.com
Phone: casey.ofarrel@tetratech.com Email: esdat_lab reports
@coffey.com

Project No: 292575-4 ~~Task No:~~ QUOTE #: SY/373/22 V2
Project Name: WSA SBT Laboratory: ALS
Sampler's Name: JP + KTH TX Project Manager: EMMA STEPHENS
Special Instructions:
Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline monitoring extended suite	Baseline monitoring finsite	PFAS ONLY	NOTES
1	MW01	13/12		W	bottles	STD	X			
2	MW02						X			
3	SBT-GW-4003						X			
4	SBT-GW-4005						X			
5	SBT-GW-4014						X			
6	SBT-GW-4017						X			
7	SBT-GW-4019						X			
8	SBT-GW-4021						X			
9	SMGW-BH-A315						X			
10	SBT-GW-1037						X			
11	SBT-GW-1042						X			
12	SBT-GW-1043						X			
13	SBT-GW-1048						X			
14	SBT-GW-1063						X			
15	RINSE-131222-JP							X		
16	QC9-131222-TX						X			PLEASE SEND TO EUROFINS
~~17~~	QC10-131222-TX						X			
17	QC11-131222-TX								X	

Subcon / Forward Lab / Split WO
Lab / Analysis: Eurofins
Organised By / Date: QC10-131222
Relinquished By / Date: QC12-131222-TX
Connote / Courier:
WO No: ES2245132
Attached By PO / Internal Sheet

Environmental Division
Sydney
Work Order Reference
ES2245132
Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jorja Pendlebury	Date: 13.12.22	Name: [illegible]	Date: 13/12/22
Coffey Environments	Time:	Company: ALS	Time: 1720
Name:	Date:	Name: A. Sinhage	Date: 14/12/22
Company:	Time:	Company: Eurofins	Time: 5:35 PM

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☑
All Documentation is in Proper Order ☑
Samples Received Properly Chilled ☑ Temp 13.5°C 13.
Lab. Ref/Batch No. 952003

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

Coffey Environments Version: 5 Issue Date: 11/08/2014

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 9225

coffey

Consigning Office: Chatswood
Report Results to: emma stephens
Invoices to: general.admin@terratech.com
~~Mobile:~~ email: emma.stephens@terratech.com Email: jack.flanagan@terratech ~~@coffey~~.com
~~Phone:~~ casey.pfarrel@terratech.com Email: esdat_labreports @coffey.com

Project No: 292575-4
~~Task No:~~ QUOTE #: SYD/373/22/ V2
Project Name: WSA SBT
Laboratory: ALS
Sampler's Name: JP+KT+TX
Project Manager: EMMA STEPHENS
Special Instructions: PLEASE FORWARD QC10-131222-TX & QC12-131222-TX TO EUROFINS
Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	PFAS ONLY	NOTES
~~2~~ 18	QC12-131222-TX TRIP BLANK	12-13		W	bottles	STD	X	PLEASE SEND 2 EUROFINS

RELINQUISHED BY		RECEIVED BY	
Name: Jorjn Pendlebury	Date: 13/12/22	Name: JC	Date: 13/12/22
Coffey Environments	Time:	Company: ALS	Time: 1720
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock Bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative, **OP** - Other Preservative

GOWANS PRINTING (02) 9755 3545

RE: Eurofins Sample Receipt Advice - Report 952003 : Site WSA 5BT (292575-4)

Stephens, Emma <Emma.Stephens@tetratech.com>

Wed 2022-12-21 2:35 PM

To: #AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

Cc: Harry Bacalis <HarryBacalis@eurofins.com>;O'Farrell, Casey <Casey.OFarrell@tetratech.com>;Flanagan, Jack <JACK.FLANAGAN@tetratech.com>

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Hi Brendan,

Can you please analyse for the following:

- **Sample 001 – QC10-131222-TX**
  - General water quality (pH, EC, TDS)
  - TOC
  - Major ions (Ca, Mg, Na, K, Cl, SO4, Alkalinity)
  - Dissolved metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)
  - Total metals (Al, Co, Fe, Mn)
  - Nutrients (Total Nitrogen + NO2 + NO3 + NH3 + Total P + Reactive P)
  - TRH/BTEXN

  PLACE HOLDERS:
  - CrVI + CrIII (to be requested following review of Cr(III+VI) results)
  - Silica-Gel Clean-up (to be analysed where TRH>C10 is above detect)

- **Sample 002 – QC12-131222-TX** – please place on **HOLD**

Emma Stephens (she/ her) | Senior Environmental Scientist
Direct **+61 3 9290 7094** | Business **+61 3 9290 7000** | Mobile **+61 458 499 700** | emma.stephens@tetratech.com
I am available Monday, Tuesday, Wednesday and Thursday

Season's Greetings | Our offices will be closed from **5pm Friday 23 December** and will reopen again on **Monday 9 January 2023.**

This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Tuesday, 20 December 2022 5:18 PM
To: Stephens, Emma <Emma.Stephens@tetratech.com>
Cc: ETS.SVC.COF_Esdat <ETS.SVC.COF_Esdat@tetratech.com>; O'Farrell, Casey <Casey.OFarrell@tetratech.com>; Flanagan, Jack <JACK.FLANAGAN@tetratech.com>
Subject: Eurofins Sample Receipt Advice - Report 952003 : Site WSA 5BT (292575-4)

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Please check and confirm testing required.
Dear Valued Client,

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | Environment Testing Analytical Services Manager as soon as possible to make certain that they get changed.

Regards

Brendan Conolly
Sample Receipt

Eurofins | Environmental Testing
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone: +61 02 9900 8421
Email: EnviroSampleNSW@eurofins.com
Website:[http:///]environment.eurofins.com.au

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How did we do? Provide your feedback here

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	4/52 Industrial Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield East NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	PO Box 60 Wickham 2293
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	Tel: +61 2 4968 8448
NATA# 1261 Site# 1254	NATA# 1261 Site# 1254	NATA# 1261 Site# 18217		NATA# 1261 Site# 20794	NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	Emma Stephens
Project name:	WSA 5BT
Project ID:	292575-4
Turnaround time:	5 Day
Date/Time received	Dec 14, 2022 5:35 PM
Eurofins reference	952003

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- N/A Sample containers for volatile analysis received with zero headspace.
- ✕ Split sample sent to requested external lab.
- ✕ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Analysis amended as requested in email.
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : or by email: SaviniSuduweli@eurofins.com

Results will be delivered electronically via email to Emma Stephens - emma.stephens@tetratech.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay, Southbank VIC 3006

Order No.:
Report #: 952003
Phone: 03 9290 7000
Fax:

Received: Dec 14, 2022 5:35 PM
Due: Dec 22, 2022
Priority: 5 Day
Contact Name: Emma Stephens

Project Name: WSA 5BT
Project ID: 292575-4

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	HOLD	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Metals M8 filtered	Eurofins Suite B1	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																			X	X		X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	QC10-131222-TX	Dec 13, 2022		Water	S22-De0047087	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
2	QC12-131222-TX	Dec 13, 2022		Water	S22-De0047088						X											
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Certificate of Analysis

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Emma Stephens**

Report **952003-W**
Project name WSA 5BT
Project ID 292575-4
Received Date Dec 14, 2022

Client Sample ID			**QC10-131222-TX**
Sample Matrix			**Water**
Eurofins Sample No.			**S22-De0047087**
Date Sampled			**Dec 13, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	107
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
Ammonia (as N)	0.01	mg/L	0.07
Chloride	1	mg/L	3200
Conductivity (at 25 °C)	10	uS/cm	8300
Nitrate & Nitrite (as N)	0.05	mg/L	0.06
Nitrate (as N)	0.02	mg/L	0.06
Nitrite (as N)	0.02	mg/L	< 0.02
pH (at 25 °C)	0.1	pH Units	4.2
Phosphate total (as P)	0.01	mg/L	< 0.01
Phosphorus reactive (as P)	0.05	mg/L	< 0.05
Sulphate (as SO4)	2	mg/L	160
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	5400

Client Sample ID			QC10-131222-TX
Sample Matrix			Water
Eurofins Sample No.			S22-De0047087
Date Sampled			Dec 13, 2022
Test/Reference	LOR	Unit	
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.0
Total Nitrogen (as N)*	0.2	mg/L	1.06
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	36
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	36
Heavy Metals			
Aluminium	0.05	mg/L	1.9
Aluminium (filtered)	0.05	mg/L	0.88
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	0.0007
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	0.086
Cobalt (filtered)	0.001	mg/L	0.072
Copper (filtered)	0.001	mg/L	0.003
Iron	0.05	mg/L	22
Iron (filtered)	0.05	mg/L	11
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	0.17
Manganese (filtered)	0.005	mg/L	0.17
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	0.053
Zinc (filtered)	0.005	mg/L	0.15
Alkali Metals			
Calcium	0.5	mg/L	8.9
Magnesium	0.5	mg/L	180
Potassium	0.5	mg/L	5.0
Sodium	0.5	mg/L	1900

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 21, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Dec 22, 2022	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Sydney	Dec 21, 2022	28 Days
- Method: E052 Total Phosphate (as P)			
Phosphorus reactive (as P)	Sydney	Dec 21, 2022	28 Days
- Method: E052 Reactive phosphate (as P)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	Dec 21, 2022	28 Days
- Method: LTM-INO-4270 Anions by Ion Chromatography			
Sulphate (as SO4)	Sydney	Dec 21, 2022	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Melbourne	Dec 22, 2022	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Conductivity (at 25 °C)	Sydney	Dec 21, 2022	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	Dec 21, 2022	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Heavy Metals	Sydney	Dec 21, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Sydney	Dec 21, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Dec 21, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Dec 21, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Sydney	Dec 21, 2022	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

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Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	HOLD	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Metals M8 filtered	Eurofins Suite B1	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																			X	X		X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	QC10-131222-TX	Dec 13, 2022		Water	S22-De0047087	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
2	QC12-131222-TX	Dec 13, 2022		Water	S22-De0047088						X											
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphorus reactive (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	71			70-130	Pass	
TRH C10-C14	%	117			70-130	Pass	
TRH C6-C10	%	72			70-130	Pass	
TRH >C10-C16	%	113			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	84			70-130	Pass	
Toluene	%	82			70-130	Pass	
Ethylbenzene	%	88			70-130	Pass	
m&p-Xylenes	%	72			70-130	Pass	
o-Xylene	%	78			70-130	Pass	
Xylenes - Total*	%	74			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	104			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	96			70-130	Pass	
Chloride	%	104			70-130	Pass	
Conductivity (at 25 °C)	%	89			70-130	Pass	
Nitrate & Nitrite (as N)	%	105			70-130	Pass	
Nitrate (as N)	%	105			70-130	Pass	
Nitrite (as N)	%	97			70-130	Pass	
Phosphate total (as P)	%	90			70-130	Pass	
Phosphorus reactive (as P)	%	103			70-130	Pass	
Sulphate (as SO4)	%	104			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	86			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	92			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	102			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	92			80-120	Pass	
Aluminium (filtered)	%	88			80-120	Pass	
Arsenic (filtered)	%	91			80-120	Pass	
Cadmium (filtered)	%	93			80-120	Pass	
Chromium (filtered)	%	91			80-120	Pass	
Cobalt	%	93			80-120	Pass	
Cobalt (filtered)	%	93			80-120	Pass	
Copper (filtered)	%	93			80-120	Pass	
Iron	%	92			80-120	Pass	
Iron (filtered)	%	91			80-120	Pass	
Lead (filtered)	%	93			80-120	Pass	
Manganese	%	92			80-120	Pass	
Manganese (filtered)	%	91			80-120	Pass	
Mercury (filtered)	%	107			80-120	Pass	
Nickel (filtered)	%	92			80-120	Pass	
Zinc (filtered)	%	95			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery									
Alkali Metals									
Calcium			%	98			80-120	Pass	
Magnesium			%	112			80-120	Pass	
Potassium			%	111			80-120	Pass	
Sodium			%	114			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	N22-De0039037	NCP	%	114			70-130	Pass	
TRH >C10-C16	N22-De0039037	NCP	%	105			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M22-De0046882	NCP	%	99			70-130	Pass	
Chloride	S22-De0043514	NCP	%	104			70-130	Pass	
Nitrate & Nitrite (as N)	M22-De0046882	NCP	%	94			70-130	Pass	
Nitrate (as N)	M22-De0046882	NCP	%	94			70-130	Pass	
Phosphate total (as P)	R22-De0043456	NCP	%	114			70-130	Pass	
Phosphorus reactive (as P)	S22-De0047087	CP	%	75			70-130	Pass	
Sulphate (as SO4)	S22-De0043514	NCP	%	102			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	B22-De0039799	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S22-De0047087	CP	%	81			75-125	Pass	
Aluminium (filtered)	S22-De0047126	NCP	%	87			75-125	Pass	
Arsenic (filtered)	S22-De0047126	NCP	%	96			75-125	Pass	
Cadmium (filtered)	S22-De0047126	NCP	%	85			75-125	Pass	
Chromium (filtered)	S22-De0047126	NCP	%	85			75-125	Pass	
Cobalt	S22-De0047087	CP	%	86			75-125	Pass	
Cobalt (filtered)	S22-De0047126	NCP	%	82			75-125	Pass	
Copper (filtered)	S22-De0047126	NCP	%	80			75-125	Pass	
Iron	R22-De0043455	NCP	%	92			75-125	Pass	
Lead (filtered)	S22-De0047126	NCP	%	80			75-125	Pass	
Manganese	S22-De0047087	CP	%	81			75-125	Pass	
Mercury (filtered)	S22-De0047126	NCP	%	100			75-125	Pass	
Nickel (filtered)	S22-De0047126	NCP	%	80			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S22-De0047087	CP	%	88			75-125	Pass	
Magnesium	R22-De0043455	NCP	%	104			75-125	Pass	
Potassium	S22-De0047087	CP	%	102			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-De0051195	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S22-De0047087	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S22-De0047087	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S22-De0047087	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S22-De0051195	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S22-De0047087	CP	mg/L	0.05	0.09	52	30%	Fail	Q15
TRH >C16-C34	S22-De0047087	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S22-De0047087	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-De0051195	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-De0051195	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S22-De0051195	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-De0051195	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S22-De0051195	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-De0051195	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S22-De0051195	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S22-De0047126	NCP	mg/L	2.5	2.5	<1	30%	Pass	
Chloride	S22-De0043524	NCP	mg/L	7.5	5.8	26	30%	Pass	
Conductivity (at 25 °C)	S22-De0047119	NCP	uS/cm	10000	10000	1.3	30%	Pass	
Nitrate & Nitrite (as N)	S22-De0047126	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrate (as N)	S22-De0047126	NCP	mg/L	0.03	0.03	3.2	30%	Pass	
Nitrite (as N)	S22-De0047126	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	R22-De0043455	NCP	mg/L	0.03	0.03	5.2	30%	Pass	
Phosphorus reactive (as P)	S22-De0047119	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Sulphate (as SO4)	S22-De0043524	NCP	mg/L	2.3	2.1	12	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	S22-De0043512	NCP	mg/L	800	770	3.8	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S22-De0050405	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	R22-De0043456	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic (filtered)	R22-De0043456	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	R22-De0043456	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	R22-De0043456	NCP	mg/L	< 0.001	0.001	16	30%	Pass	
Cobalt	S22-De0050405	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	R22-De0043456	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	R22-De0043456	NCP	mg/L	0.001	0.001	25	30%	Pass	
Iron	S22-De0050405	NCP	mg/L	0.35	0.32	7.2	30%	Pass	
Iron (filtered)	R22-De0043456	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead (filtered)	R22-De0043456	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S22-De0050405	NCP	mg/L	0.071	0.068	4.5	30%	Pass	
Manganese (filtered)	R22-De0043456	NCP	mg/L	0.042	0.040	4.4	30%	Pass	
Mercury (filtered)	R22-De0043456	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	R22-De0043456	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	R22-De0043456	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S22-De0050405	NCP	mg/L	21	20	1.1	30%	Pass	
Magnesium	S22-De0050405	NCP	mg/L	1.7	1.7	4.7	30%	Pass	
Potassium	S22-De0050405	NCP	mg/L	29	28	1.7	30%	Pass	
Sodium	S22-De0050405	NCP	mg/L	31	30	3.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Harry Bacalis	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 2 9223

coffey

Consigning Office:

Report Results to: emma stephens email ~~Mobile:~~ emmastephens@tetratech.com Email: jack.flanagan@tetratech.com ~~@coffey~~.com

Invoices to: general.admin@tetratech.com Phone: casey.ofarrel@tetratech.com Email: esdat_labreports @coffey.com

Project No: 292575-4 Task No:

Project Name: WSA-SBT Laboratory: ALS

Sampler's Name: JP Project Manager: EMMA STEPHENS

Special Instructions: PLEASE FORWARD QC8-12222-JP TO EUROFINS

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Subcon / Forward Lab / Split WO

Lab / Analysis: Eurofins - QC8-12222-JP

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

WO No:

Attached By PO / Internal Sheet:

NOTES

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring suite	Baseline Monitoring rinsate
1	SBT-CM-1022	12/12/22		W	bottles	STD	X	
2	SBT-CM-1020D						X	
3	SBT-CM-1020M						X	
4	SBT-CM-1020S						X	
5	SBT-GW-1019rS						X	
6	SBT-GW-1019rM						X	
7	SBT-GW-1019rD						X	
8	MW1-S						X	
9	MW1-M						X	
10	MW1-D						X	
11	SMGW-GW02-S						X	
12	SMGW-GW02-M						X	
13	SMGW-GW02-D						X	
14	QC7-121222-JP						X	
~~15~~	QC8-121222-JP						X	
15	RINSE-121222-JP							X

HT

Environmental Division
Sydney
Work Order Reference
ES2244937

Telephone : +61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Jorja Pendlebury	Date: 12/12/22	Name: J C	Date: 12/12/22
Coffey Environments	Time: 4 pm	Company: AL	Time: 1930
Name:	Date:	Name: A. Sinharse	Date: 14/12/22
Company:	Time:	Company: Eurofins	Time: 5:35PM

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☑
- All Documentation is in Proper Order ☑
- Samples Received Properly Chilled ☑ 13.8°C
- Lab. Ref/Batch No. 552023

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

GOWANS PRINTING (02) 9755 3545

Cou.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/2242~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
16	SBT-GW-1001	12/12/22	AM	Water	Bottles	Std (5-day)	X													
17	SBT-GW-1002	↓	↓	Water	Bottles	Std (5-day)	X													
18	SBT-GW-1005			Water	Bottles	Std (5-day)	X													
19	SBT-GW-1017A			Water	Bottles	Std (5-day)	X													
20	SBT-GW-1017B			Water	Bottles	Std (5-day)	X													
21	SMGW-BH-A107			Water	Bottles	Std (5-day)	X													
22	TRIP BLANK			Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

RELINQUISHED BY		RECEIVED BY	
Name: Terry XU	Date: 12/12/22	Name: J G	Date: 12/12/22
Coffey	Time: 4pm	Company: AU	Time: 19:30
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved In Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

RE: Eurofins Sample Receipt Advice - Report 952023 : Site WSA-JBT (292575-4)

Stephens, Emma <Emma.Stephens@tetratech.com>

Wed 2022-12-21 2:40 PM

To: #AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

Cc: Harry Bacalis <HarryBacalis@eurofins.com>;O'Farrell, Casey <Casey.OFarrell@tetratech.com>;Flanagan, Jack <JACK.FLANAGAN@tetratech.com>

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Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Hi Brendan,

Can you please analyse sample QC8-121222-JP for the following:

- General water quality (pH, EC, TDS)
- TOC
- Major ions (Ca, Mg, Na, K, Cl, SO4, Alkalinity)
- Dissolved metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)
- Total metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)
- Nutrients (Total Nitrogen + NO2 + NO3 + NH3 + Total P + Reactive P)
- Poly-Aromatic Hydrocarbons
- VOCs/SVOCs (including TRH/BTEXN)
- OCPs/OPPs
- PFAS short suite

- **PLACE HOLDERS – only to be analysed if requested following review of results**:
  - CrVI + CrIII
  - Silica-Gel Clean-up

Thanks,

Emma Stephens (she/ her) | Senior Environmental Scientist
Direct **+61 3 9290 7094** | Business **+61 3 9290 7000** | Mobile **+61 458 499 700** | emma.stephens@tetratech.com
I am available Monday, Tuesday, Wednesday and Thursday

Season's Greetings | Our offices will be closed from **5pm Friday 23 December** and will reopen again on **Monday 9 January 2023**.

This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Tuesday, 20 December 2022 5:19 PM
To: Stephens, Emma <Emma.Stephens@tetratech.com>
Cc: ETS.SVC.COF_Esdat <ETS.SVC.COF_Esdat@tetratech.com>; O'Farrell, Casey <Casey.OFarrell@tetratech.com>; Flanagan, Jack <JACK.FLANAGAN@tetratech.com>
Subject: Eurofins Sample Receipt Advice - Report 952023 : Site WSA-JBT (292575-4)

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Dear Valued Client,

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | Environment Testing Analytical Services Manager as soon as possible to make certain that they get changed.

Regards

Brendan Conolly
Sample Receipt

Eurofins | Environmental Testing
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone: +61 02 9900 8421
Email: EnviroSampleNSW@eurofins.com
Website:[http:///]environment.eurofins.com.au

View our latest EnviroNotes
How did we do? Provide your feedback here

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	- All Invoices
Project name:	WSA-JBT
Project ID:	292575-4
Turnaround time:	5 Day
Date/Time received	Dec 14, 2022 5:35 AM
Eurofins reference	952023

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- N/A Sample containers for volatile analysis received with zero headspace.
- ✕ Split sample sent to requested external lab.
- ✕ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Analysis amended as requested in email.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : or by email: SaviniSuduweli@eurofins.com

Results will be delivered electronically via email to - All Invoices - ABTF_ENVI_Invoices@coffey.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: WSA-JBT
Project ID: 292575-4

Order No.:
Report #: 952023
Phone: 03 9290 7000
Fax:

Received: Dec 14, 2022 5:35 AM
Due: Dec 21, 2022
Priority: 5 Day
Contact Name: - All Invoices

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X							X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
External Laboratory																											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																						
1	QC8-121222-JP	Dec 01, 2022		Water	S22-De0047119	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

eurofins | Environment Testing

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Attention: **- All Invoices**

Report **952023-W**
Project name WSA-JBT
Project ID 292575-4
Received Date Dec 14, 2022

Client Sample ID			**QC8-121222-JP**
Sample Matrix			**Water**
Eurofins Sample No.			**S22-De0047119**
Date Sampled			**Dec 01, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	124
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001

Client Sample ID			QC8-121222-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0047119
Date Sampled			Dec 01, 2022
Test/Reference	LOR	Unit	
Volatile Organics			
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	0.018
2-Propanone (Acetone)	0.005	mg/L	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.005	mg/L	< 0.005
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	0.014
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	0.005
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	0.006
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	0.025
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	0.025
4-Bromofluorobenzene (surr.)	1	%	124
Toluene-d8 (surr.)	1	%	135
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01

Client Sample ID			QC8-121222-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0047119
Date Sampled			Dec 01, 2022
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	60
p-Terphenyl-d14 (surr.)	1	%	INT
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	INT
Tetrachloro-m-xylene (surr.)	1	%	110

Client Sample ID			QC8-121222-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0047119
Date Sampled			Dec 01, 2022
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	INT
Semivolatile Organics			
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.005
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005

Client Sample ID			QC8-121222-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0047119
Date Sampled			Dec 01, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
2-Chloronaphthalene	0.005	mg/L	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003
2-Fluorobiphenyl (surr.)	1	%	60
2-Methylnaphthalene	0.005	mg/L	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.005
2-Nitroaniline	0.005	mg/L	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01
2-Picoline	0.005	mg/L	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Tribromophenol (surr.)	1	%	INT
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
2.6-Dinitrotoluene	0.005	mg/L	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005
4-Nitrophenol	0.03	mg/L	< 0.03
4.4'-DDD	0.005	mg/L	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005
a-HCH	0.005	mg/L	< 0.005
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Acetophenone	0.005	mg/L	< 0.005
Aldrin	0.005	mg/L	< 0.005
Aniline	0.005	mg/L	< 0.005
Anthracene	0.001	mg/L	< 0.001
b-HCH	0.005	mg/L	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005

Client Sample ID			QC8-121222-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0047119
Date Sampled			Dec 01, 2022
Test/Reference	LOR	Unit	
Semivolatile Organics			
Butyl benzyl phthalate	0.005	mg/L	< 0.005
Chrysene	0.001	mg/L	< 0.001
d-HCH	0.005	mg/L	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005
Dieldrin	0.005	mg/L	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005
Diphenylamine	0.005	mg/L	< 0.005
Endosulfan I	0.005	mg/L	< 0.005
Endosulfan II	0.005	mg/L	< 0.005
Endosulfan sulphate	0.005	mg/L	< 0.005
Endrin	0.005	mg/L	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005
Endrin ketone	0.005	mg/L	< 0.005
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
g-HCH (Lindane)	0.005	mg/L	< 0.005
Heptachlor	0.005	mg/L	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Methoxychlor	0.005	mg/L	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005
Naphthalene	0.001	mg/L	< 0.001
Nitrobenzene	0.005	mg/L	< 0.005
Nitrobenzene-d5 (surr.)	1	%	131
Pentachlorobenzene	0.005	mg/L	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005
Pentachlorophenol	0.01	mg/L	< 0.01
Phenanthrene	0.001	mg/L	< 0.001
Phenol	0.003	mg/L	< 0.003
Phenol-d6 (surr.)	1	%	42
Pronamide	0.005	mg/L	< 0.005
Pyrene	0.001	mg/L	< 0.001
Trifluralin	0.005	mg/L	< 0.005

Client Sample ID			QC8-121222-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0047119
Date Sampled			Dec 01, 2022
Test/Reference	LOR	Unit	
Ammonia (as N)	0.01	mg/L	< 0.01
Chloride	1	mg/L	4300
Conductivity (at 25 °C)	10	uS/cm	10000
Nitrate & Nitrite (as N)	0.05	mg/L	0.29
Nitrate (as N)	0.02	mg/L	0.29
Nitrite (as N)	0.02	mg/L	< 0.02
pH (at 25 °C)	0.1	pH Units	4.1
Phosphate total (as P)	0.01	mg/L	0.14
Phosphorus reactive (as P)	0.05	mg/L	< 0.05
Sulphate (as SO4)	2	mg/L	270
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	7400
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.9
Total Nitrogen (as N)*	0.2	mg/L	3.19
Total Organic Carbon	5	mg/L	8.6
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	5100
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	5100
Heavy Metals			
Aluminium	0.05	mg/L	4.0
Aluminium (filtered)	0.05	mg/L	0.77
Arsenic	0.001	mg/L	0.007
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.013
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	0.11
Cobalt (filtered)	0.001	mg/L	0.11
Copper	0.001	mg/L	0.017
Copper (filtered)	0.001	mg/L	0.003
Iron	0.05	mg/L	43
Iron (filtered)	0.05	mg/L	12
Lead	0.001	mg/L	0.028
Lead (filtered)	0.001	mg/L	0.005
Manganese	0.005	mg/L	0.36
Manganese (filtered)	0.005	mg/L	0.26
Mercury	0.0001	mg/L	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.042
Nickel (filtered)	0.001	mg/L	0.037
Zinc	0.005	mg/L	0.18
Zinc (filtered)	0.005	mg/L	0.12
Alkali Metals			
Calcium	0.5	mg/L	96
Magnesium	0.5	mg/L	230
Potassium	0.5	mg/L	6.6
Sodium	0.5	mg/L	2200

Client Sample ID			QC8-121222-JP
Sample Matrix			Water
Eurofins Sample No.			S22-De0047119
Date Sampled			Dec 01, 2022
Test/Reference	LOR	Unit	
Per- and Polyfluoroalkyl Substances (PFASs) - Short			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
13C2-6:2 FTSA (surr.)	1	%	140
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.02
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
18O2-PFHxS (surr.)	1	%	122
13C8-PFOS (surr.)	1	%	121
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
13C8-PFOA (surr.)	1	%	111
Sum (PFHxS + PFOS)*	0.01	ug/L	0.02
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.02

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 21, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Volatile Organics	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Semivolatile Organics	Sydney	Dec 21, 2022	7 Day
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Conductivity (at 25 °C)	Sydney	Dec 21, 2022	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	Dec 21, 2022	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Total Organic Carbon	Melbourne	Dec 22, 2022	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Heavy Metals	Sydney	Dec 21, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Sydney	Dec 21, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8	Sydney	Dec 21, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Dec 21, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Dec 21, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs) - Short	Sydney	Dec 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Organochlorine Pesticides	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Dec 21, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Dec 22, 2022	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Sydney	Dec 21, 2022	28 Days
- Method: E052 Total Phosphate (as P)			
Phosphorus reactive (as P)	Sydney	Dec 21, 2022	28 Days
- Method: E052 Reactive phosphate (as P)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 22, 2022	28 Days

Description	Testing Site	Extracted	Holding Time
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Melbourne	Dec 21, 2022	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Sulphate (as SO4)	Sydney	Dec 21, 2022	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Melbourne	Dec 22, 2022	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Sydney	Dec 21, 2022	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay, Southbank VIC 3006

Project Name: WSA-JBT
Project ID: 292575-4

Order No.:
Report #: 952023
Phone: 03 9290 7000
Fax:

Received: Dec 14, 2022 5:35 AM
Due: Dec 21, 2022
Priority: 5 Day
Contact Name: - All Invoices

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Suite B14: OCP/OPP	Eurofins Suite B1	Eurofins Suite SVV: SVOC/VOC	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X							X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
External Laboratory																											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																						
1	QC8-121222-JP	Dec 01, 2022		Water	S22-De0047119	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2.4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
4.4'-DDD	mg/L	< 0.005			0.005	Pass	
4.4'-DDE	mg/L	< 0.005			0.005	Pass	
4.4'-DDT	mg/L	< 0.005			0.005	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-HCH	mg/L	< 0.005			0.005	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
b-HCH	mg/L	< 0.005			0.005	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
d-HCH	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a.j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
g-HCH (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Nitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphorus reactive (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Sum of US EPA PFAS (PFOS + PFOA)*	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	105			70-130	Pass	
TRH C10-C14	%	78			70-130	Pass	
TRH C6-C10	%	102			70-130	Pass	
TRH >C10-C16	%	77			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	110			70-130	Pass	
Toluene	%	106			70-130	Pass	
Ethylbenzene	%	109			70-130	Pass	
m&p-Xylenes	%	124			70-130	Pass	
o-Xylene	%	110			70-130	Pass	
Xylenes - Total*	%	119			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	103			70-130	Pass	
1.1.1-Trichloroethane	%	101			70-130	Pass	
1.2-Dichlorobenzene	%	111			70-130	Pass	
1.2-Dichloroethane	%	126			70-130	Pass	
Trichloroethene	%	96			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	98			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	85			70-130	Pass	
Acenaphthylene	%	107			70-130	Pass	
Anthracene	%	101			70-130	Pass	
Benz(a)anthracene	%	91			70-130	Pass	
Benzo(a)pyrene	%	91			70-130	Pass	
Benzo(b&j)fluoranthene	%	102			70-130	Pass	
Benzo(g.h.i)perylene	%	116			70-130	Pass	
Benzo(k)fluoranthene	%	96			70-130	Pass	
Chrysene	%	92			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	%	130			70-130	Pass	
Fluoranthene	%	108			70-130	Pass	
Fluorene	%	111			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	124			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
Phenanthrene	%	72			70-130	Pass	
Pyrene	%	89			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	73			70-130	Pass	
4.4'-DDD	%	102			70-130	Pass	
4.4'-DDE	%	115			70-130	Pass	
4.4'-DDT	%	98			70-130	Pass	
a-HCH	%	74			70-130	Pass	
Aldrin	%	91			70-130	Pass	
b-HCH	%	101			70-130	Pass	
d-HCH	%	100			70-130	Pass	
Dieldrin	%	103			70-130	Pass	
Endosulfan I	%	86			70-130	Pass	
Endosulfan II	%	103			70-130	Pass	
Endosulfan sulphate	%	95			70-130	Pass	
Endrin	%	106			70-130	Pass	
Endrin aldehyde	%	115			70-130	Pass	
Endrin ketone	%	84			70-130	Pass	
g-HCH (Lindane)	%	101			70-130	Pass	
Heptachlor	%	86			70-130	Pass	
Heptachlor epoxide	%	78			70-130	Pass	
Hexachlorobenzene	%	89			70-130	Pass	
Methoxychlor	%	96			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	119			70-130	Pass	
Dimethoate	%	77			70-130	Pass	
Ethion	%	83			70-130	Pass	
Fenitrothion	%	85			70-130	Pass	
Methyl parathion	%	73			70-130	Pass	
Mevinphos	%	80			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	%	63			25-140	Pass	
2-Chlorophenol	%	70			25-140	Pass	
2-Methylphenol (o-Cresol)	%	80			25-140	Pass	
2-Nitrophenol	%	76			25-140	Pass	
2.4-Dichlorophenol	%	79			25-140	Pass	
2.4-Dimethylphenol	%	68			25-140	Pass	
2.4-Dinitrophenol	%	66			25-140	Pass	
2.4-Dinitrotoluene	%	96			70-130	Pass	
2.4.5-Trichlorophenol	%	70			25-140	Pass	
2.4.6-Trichlorophenol	%	55			25-140	Pass	
2.6-Dichlorophenol	%	53			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	81			25-140	Pass	
4-Chloro-3-methylphenol	%	74			25-140	Pass	
4-Nitrophenol	%	38			25-140	Pass	
N-Nitrosodipropylamine	%	79			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pentachlorophenol	%	58			25-140	Pass	
Phenol	%	36			25-140	Pass	
LCS - % Recovery							
Ammonia (as N)	%	96			70-130	Pass	
Conductivity (at 25 °C)	%	89			70-130	Pass	
Nitrate & Nitrite (as N)	%	104			70-130	Pass	
Nitrate (as N)	%	104			70-130	Pass	
Nitrite (as N)	%	97			70-130	Pass	
Phosphate total (as P)	%	90			70-130	Pass	
Phosphorus reactive (as P)	%	103			70-130	Pass	
Sulphate (as SO4)	%	104			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	86			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	88			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	77			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	93			80-120	Pass	
Aluminium (filtered)	%	90			80-120	Pass	
Arsenic	%	91			80-120	Pass	
Arsenic (filtered)	%	92			80-120	Pass	
Cadmium	%	91			80-120	Pass	
Cadmium (filtered)	%	92			80-120	Pass	
Chromium	%	93			80-120	Pass	
Chromium (filtered)	%	92			80-120	Pass	
Cobalt (filtered)	%	89			80-120	Pass	
Copper	%	89			80-120	Pass	
Copper (filtered)	%	91			80-120	Pass	
Iron	%	92			80-120	Pass	
Iron (filtered)	%	91			80-120	Pass	
Lead	%	92			80-120	Pass	
Lead (filtered)	%	90			80-120	Pass	
Manganese	%	93			80-120	Pass	
Manganese (filtered)	%	92			80-120	Pass	
Mercury	%	96			80-120	Pass	
Mercury (filtered)	%	102			80-120	Pass	
Nickel	%	92			80-120	Pass	
Nickel (filtered)	%	91			80-120	Pass	
Zinc	%	90			80-120	Pass	
Zinc (filtered)	%	88			80-120	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	98			80-120	Pass	
Magnesium	%	91			80-120	Pass	
Potassium	%	110			80-120	Pass	
Sodium	%	115			80-120	Pass	
LCS - % Recovery							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	101			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	94			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	90			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	94			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	N22-De0039037	NCP	%	114			70-130	Pass	
TRH >C10-C16	N22-De0039037	NCP	%	105			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-Oc0046750	NCP	%	108			70-130	Pass	
Toluene	S22-Oc0046750	NCP	%	108			70-130	Pass	
Ethylbenzene	S22-Oc0046750	NCP	%	110			70-130	Pass	
m&p-Xylenes	S22-Oc0046750	NCP	%	114			70-130	Pass	
o-Xylene	S22-Oc0046750	NCP	%	112			70-130	Pass	
Xylenes - Total*	S22-Oc0046750	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1.1-Trichloroethane	S22-Oc0046750	NCP	%	97			70-130	Pass	
1.2-Dichlorobenzene	S22-Oc0046750	NCP	%	119			70-130	Pass	
1.2-Dichloroethane	S22-Oc0046750	NCP	%	107			70-130	Pass	
Trichloroethene	S22-Oc0046750	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S22-Oc0046750	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-De0025946	NCP	%	82			70-130	Pass	
Acenaphthylene	S22-De0025946	NCP	%	79			70-130	Pass	
Anthracene	S22-De0025946	NCP	%	91			70-130	Pass	
Benz(a)anthracene	S22-De0025946	NCP	%	82			70-130	Pass	
Benzo(a)pyrene	S22-De0025946	NCP	%	84			70-130	Pass	
Benzo(b&j)fluoranthene	S22-De0025946	NCP	%	93			70-130	Pass	
Benzo(g.h.i)perylene	S22-De0025946	NCP	%	105			70-130	Pass	
Benzo(k)fluoranthene	S22-De0025946	NCP	%	83			70-130	Pass	
Chrysene	S22-De0025946	NCP	%	100			70-130	Pass	
Dibenz(a.h)anthracene	S22-De0025946	NCP	%	88			70-130	Pass	
Fluoranthene	S22-De0025946	NCP	%	95			70-130	Pass	
Fluorene	S22-De0025946	NCP	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-De0025946	NCP	%	85			70-130	Pass	
Phenanthrene	S22-De0025946	NCP	%	97			70-130	Pass	
Pyrene	S22-De0025946	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-De0021068	NCP	%	103			70-130	Pass	
4.4'-DDD	S22-De0021068	NCP	%	110			70-130	Pass	
4.4'-DDE	S22-De0021068	NCP	%	108			70-130	Pass	
4.4'-DDT	S22-De0021068	NCP	%	103			70-130	Pass	
a-HCH	S22-De0021068	NCP	%	92			70-130	Pass	
Aldrin	S22-De0021068	NCP	%	95			70-130	Pass	
b-HCH	S22-De0021068	NCP	%	102			70-130	Pass	
d-HCH	S22-De0021068	NCP	%	116			70-130	Pass	
Endosulfan I	S22-De0021068	NCP	%	98			70-130	Pass	
Endosulfan II	S22-De0021068	NCP	%	103			70-130	Pass	
Endosulfan sulphate	S22-De0021068	NCP	%	103			70-130	Pass	
Endrin	S22-De0021068	NCP	%	116			70-130	Pass	
Endrin aldehyde	S22-De0021068	NCP	%	124			70-130	Pass	
Endrin ketone	S22-De0021068	NCP	%	113			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
g-HCH (Lindane)	S22-De0021068	NCP	%	101			70-130	Pass	
Heptachlor epoxide	S22-De0021068	NCP	%	105			70-130	Pass	
Hexachlorobenzene	S22-De0021068	NCP	%	102			70-130	Pass	
Methoxychlor	S22-De0021068	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S22-De0021068	NCP	%	115			70-130	Pass	
Dimethoate	S22-De0021068	NCP	%	101			70-130	Pass	
Ethion	S22-De0021068	NCP	%	130			70-130	Pass	
Fenitrothion	S22-De0021068	NCP	%	88			70-130	Pass	
Methyl parathion	S22-De0021068	NCP	%	93			70-130	Pass	
Mevinphos	S22-De0021068	NCP	%	90			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M22-De0046882	NCP	%	99			70-130	Pass	
Nitrate & Nitrite (as N)	M22-De0046882	NCP	%	94			70-130	Pass	
Nitrate (as N)	M22-De0046882	NCP	%	94			70-130	Pass	
Phosphate total (as P)	R22-De0043456	NCP	%	114			70-130	Pass	
Phosphorus reactive (as P)	S22-De0047087	NCP	%	75			70-130	Pass	
Sulphate (as SO4)	S22-De0043514	NCP	%	102			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	B22-De0039799	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	N22-De0046519	NCP	%	96			75-125	Pass	
Aluminium (filtered)	S22-De0049449	NCP	%	93			75-125	Pass	
Arsenic	N22-De0046519	NCP	%	97			75-125	Pass	
Arsenic (filtered)	S22-De0049449	NCP	%	92			75-125	Pass	
Cadmium	N22-De0046519	NCP	%	91			75-125	Pass	
Cadmium (filtered)	S22-De0049449	NCP	%	98			75-125	Pass	
Chromium	N22-De0046519	NCP	%	93			75-125	Pass	
Chromium (filtered)	S22-De0049449	NCP	%	92			75-125	Pass	
Cobalt (filtered)	S22-De0049449	NCP	%	91			75-125	Pass	
Copper	N22-De0046519	NCP	%	86			75-125	Pass	
Copper (filtered)	S22-De0049449	NCP	%	91			75-125	Pass	
Iron	N22-De0046519	NCP	%	91			75-125	Pass	
Iron (filtered)	S22-De0049449	NCP	%	93			75-125	Pass	
Lead	N22-De0046519	NCP	%	89			75-125	Pass	
Lead (filtered)	S22-De0049449	NCP	%	90			75-125	Pass	
Manganese	N22-De0046519	NCP	%	93			75-125	Pass	
Manganese (filtered)	S22-De0049449	NCP	%	90			75-125	Pass	
Mercury	N22-De0046519	NCP	%	99			75-125	Pass	
Mercury (filtered)	S22-De0049449	NCP	%	100			75-125	Pass	
Nickel	N22-De0046519	NCP	%	90			75-125	Pass	
Nickel (filtered)	S22-De0049449	NCP	%	91			75-125	Pass	
Zinc	N22-De0046519	NCP	%	87			75-125	Pass	
Zinc (filtered)	S22-De0049449	NCP	%	90			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S22-De0038379	NCP	%	100			75-125	Pass	
Magnesium	N22-De0046519	NCP	%	90			75-125	Pass	
Potassium	N22-De0046519	NCP	%	111			75-125	Pass	
Sodium	N22-De0046519	NCP	%	87			75-125	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1					
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-De0049528	NCP	%	102			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-De0049528	NCP	%	90			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S22-De0049528	NCP	%	94			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-De0014322	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S22-De0047097	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S22-De0047097	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S22-De0047097	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S22-De0014322	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S22-De0047097	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S22-De0047097	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S22-De0047097	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-De0014322	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-De0014322	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorotoluene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Carbon Tetrachloride	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloroform	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1.2-Dichloroethene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Iodomethane	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Styrene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S22-De0014322	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	S22-De0014322	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S22-De0014322	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S22-De0021422	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endosulfan sulphate	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	S22-De0047097	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	S22-De0047097	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	S22-De0047097	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	S22-De0047097	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	S22-De0047097	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	S22-De0047097	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	S22-De0047097	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	S22-De0021422	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
1-Chloronaphthalene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1-Naphthylamine	S22-De0021422	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3-Trichlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
1.2.3.5-Tetrachlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4-Trichlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3-Dichlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3.5-Trichlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.4-Dichlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chloronaphthalene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chlorophenol	S22-De0021422	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Methylnaphthalene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S22-De0021422	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Naphthylamine	S22-De0021422	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
2-Nitroaniline	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Nitrophenol	S22-De0021422	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2-Picoline	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	S22-De0021422	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dichlorophenol	S22-De0021422	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dimethylphenol	S22-De0021422	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S22-De0021422	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2.4-Dinitrotoluene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.4.5-Trichlorophenol	S22-De0021422	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S22-De0021422	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S22-De0021422	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.6-Dinitrotoluene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S22-De0021422	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
3-Methylcholanthrene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3.3'-Dichlorobenzidine	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Aminobiphenyl	S22-De0021422	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Bromophenyl phenyl ether	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chloro-3-methylphenol	S22-De0021422	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Chlorophenyl phenyl ether	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Nitrophenol	S22-De0021422	NCP	mg/L	< 0.06	< 0.06	<1	30%	Pass	
4.4'-DDD	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDE	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDT	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
a-HCH	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Acetophenone	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aldrin	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aniline	S22-De0021422	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
b-HCH	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Benzyl chloride	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroethoxy)methane	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Butyl benzyl phthalate	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
d-HCH	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-butyl phthalate	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-octyl phthalate	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenz(a.j)acridine	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenzofuran	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dieldrin	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diethyl phthalate	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethyl phthalate	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethylaminoazobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
Diphenylamine	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan I	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan II	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan sulphate	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin aldehyde	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin ketone	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
g-HCH (Lindane)	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor epoxide	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobutadiene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorocyclopentadiene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachloroethane	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Methoxychlor	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodibutylamine	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodipropylamine	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosopiperidine	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nitrobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachloronitrobenzene	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorophenol	S22-De0021422	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Phenol	S22-De0021422	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Pronamide	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Trifluralin	S22-De0021422	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S22-De0047126	NCP	mg/L	2.5	2.5	<1	30%	Pass	
Conductivity (at 25 °C)	S22-De0047119	CP	uS/cm	10000	10000	1.3	30%	Pass	
Nitrate & Nitrite (as N)	S22-De0047126	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrate (as N)	S22-De0047126	NCP	mg/L	0.03	0.03	3.2	30%	Pass	
Nitrite (as N)	S22-De0047126	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	R22-De0043455	NCP	mg/L	0.03	0.03	5.2	30%	Pass	
Phosphorus reactive (as P)	S22-De0047119	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Sulphate (as SO4)	S22-De0043524	NCP	mg/L	2.3	2.1	12	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	S22-De0043512	NCP	mg/L	800	770	3.8	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B22-De0036621	NCP	mg/L	110	95	15	30%	Pass	
Total Organic Carbon	M22-De0048277	NCP	mg/L	17	17	1.7	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Carbonate Alkalinity (as CaCO3)	B22-De0057748	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	B22-De0057748	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S22-De0047119	CP	mg/L	4.0	4.1	3.1	30%	Pass	
Aluminium (filtered)	S22-De0047119	CP	mg/L	0.77	0.82	5.4	30%	Pass	
Arsenic	S22-De0047119	CP	mg/L	0.007	0.008	6.9	30%	Pass	
Arsenic (filtered)	S22-De0047119	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S22-De0047119	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S22-De0047119	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-De0047119	CP	mg/L	0.013	0.012	12	30%	Pass	
Chromium (filtered)	S22-De0047119	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S22-De0047119	CP	mg/L	0.11	0.12	2.2	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Cobalt (filtered)	S22-De0047119	CP	mg/L	0.11	0.12	1.4	30%	Pass	
Copper	S22-De0047119	CP	mg/L	0.017	0.017	1.2	30%	Pass	
Copper (filtered)	S22-De0047119	CP	mg/L	0.003	0.003	7.2	30%	Pass	
Iron	S22-De0047119	CP	mg/L	43	41	6.9	30%	Pass	
Iron (filtered)	S22-De0047119	CP	mg/L	12	12	3.3	30%	Pass	
Lead	S22-De0047119	CP	mg/L	0.028	0.028	<1	30%	Pass	
Lead (filtered)	S22-De0047119	CP	mg/L	0.005	0.005	<1	30%	Pass	
Manganese	S22-De0047119	CP	mg/L	0.36	0.36	1.8	30%	Pass	
Manganese (filtered)	S22-De0047119	CP	mg/L	0.26	0.26	3.1	30%	Pass	
Mercury	S22-De0047119	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S22-De0047119	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-De0047119	CP	mg/L	0.042	0.043	2.8	30%	Pass	
Nickel (filtered)	S22-De0047119	CP	mg/L	0.037	0.038	1.2	30%	Pass	
Zinc	S22-De0047119	CP	mg/L	0.18	0.18	1.4	30%	Pass	
Zinc (filtered)	S22-De0047119	CP	mg/L	0.12	0.12	4.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S22-De0047119	CP	mg/L	96	97	1.2	30%	Pass	
Magnesium	S22-De0047119	CP	mg/L	230	230	<1	30%	Pass	
Potassium	S22-De0047119	CP	mg/L	6.6	6.6	<1	30%	Pass	
Sodium	S22-De0047119	CP	mg/L	2200	2000	5.8	30%	Pass	
Duplicate									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-De0050934	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-De0050934	NCP	ug/L	0.02	0.02	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-De0050934	NCP	ug/L	0.05	0.04	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-De0050934	NCP	ug/L	0.02	0.02	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.

Authorised by:

Savini Suduweli	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Fang Yee Tan	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Inorganic
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 9226

coffey

Consigning Office: Chatswood
Report Results to: Emma Stephens - email
~~Mobile~~: emma.stephens@ieratech.com Email: jack.flanagan@ieratech.com
Invoices to: general.admin@ieratech.com Phone: coeyofficeieratech.com Email: esdat_lab reports@coffey.com

Project No: 292575-4 ~~Task No.~~ QUOTE # = S4/373/22 V2
Project Name: WJA SBT Laboratory: ALS
Sampler's Name: JP + KT Project Manager: Emma Stephens
Special Instructions: PLEASE FORWARD QC14 & QC16 TO EUROFINS
Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	PFA ONLY	Baseline Monitoring & Extended Suite Backlog Monitoring	NOTES
1	SBT-GW-3006	15/12		W	bottles	STD	X		
2	SBT-GW-3012 A						X		
3	SBT-GW-3012B						X		
4	SBT-GW-3012 C						X		
5	SBT-GW-3022						X		
6	QC13-151222-JP						X		
7	QC14-151222-JP						X		FORWARD TO EUROFINS
8	QC15-151222-JP						X		
9	QC16-151222-JP						X		FORWARD TO EUROFINS
10	RINSE-151222-JP						X		
11	SBT-GW-3022						X		
12	SBT-GW-3003A						X		
13	SBT-GW-3003B						X		
14	SBT-GW-3003C						X		
15	SMGW-BH-D109S						X		
16	TRIP BLANK						X		
	SBT-GW-1031						X		
	SMGW-BH-A401						X		

Environmental Division Sydney
Work Order Reference
ES2245622
Telephone : + 61-2-8784 8555

RELINQUISHED BY		RECEIVED BY	
Name: Joija Pendlebury	Date: 15/12/22	Name: JC	Date: 15/12/22
Coffey Environments	Time: 11:40 am	Company: ALS	Time: 1830
Name:	Date:	Name:	Date: 19/12
Company:	Time:	Company: ALS	Time: 2:18

Sample Receipt Advice: (Lab Use Only)
- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐

Lab. Ref/Batch No. 95030

*Container Type & Preservation Codes: **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock Bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative, **OP** - Other Preservative

RE: Eurofins Sample Receipt Advice - Report 952030 : Site WSA SBT (292575-4)

Stephens, Emma <Emma.Stephens@tetratech.com>

Wed 2022-12-21 2:44 PM

To: #AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

Cc: Harry Bacalis <HarryBacalis@eurofins.com>;O'Farrell, Casey <Casey.OFarrell@tetratech.com>;Flanagan, Jack <JACK.FLANAGAN@tetratech.com>

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

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Hi Brendan,

Can you please add the following analysis:

- **Sample 002 – QC16-151222-JP**
  - General water quality (pH, EC, TDS)
  - TOC
  - Major ions (Ca, Mg, Na, K, Cl, SO4, Alkalinity)
  - Dissolved metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)
  - Total metals (Al, Co, Fe, Mn)
  - Nutrients (Total Nitrogen + NO2 + NO3 + NH3 + Total P + Reactive P)
  - TRH/BTEXN

  PLACE HOLDERS:
  - CrVI + CrIII (to be requested following review of Cr(III+VI) results)
  - Silica-Gel Clean-up (to be analysed where TRH>C10 is above detect)

Thanks,

Emma Stephens (she/ her) | Senior Environmental Scientist
Direct **+61 3 9290 7094** | Business **+61 3 9290 7000** | Mobile **+61 458 499 700** | emma.stephens@tetratech.com
I am available Monday, Tuesday, Wednesday and Thursday

Season's Greetings | Our offices will be closed from **5pm Friday 23 December** and will reopen again on **Monday 9 January 2023**.

This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Tuesday, 20 December 2022 5:29 PM
To: Stephens, Emma <Emma.Stephens@tetratech.com>
Cc: ETS.SVC.COF_Esdat <ETS.SVC.COF_Esdat@tetratech.com>; O'Farrell, Casey <Casey.OFarrell@tetratech.com>; Flanagan, Jack <JACK.FLANAGAN@tetratech.com>
Subject: Eurofins Sample Receipt Advice - Report 952030 : Site WSA SBT (292575-4)

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Please check and confirm Testing required.

Dear Valued Client,

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | Environment Testing Analytical Services Manager as soon as possible to make certain that they get changed.

Regards

Brendan Conolly
Sample Receipt

Eurofins | Environmental Testing
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone: +61 02 9900 8421
Email: EnviroSampleNSW@eurofins.com
Website:[http:///]environment.eurofins.com.au

View our latest EnviroNotes
How did we do? Provide your feedback here

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	- All Invoices
Project name:	WSA SBT
Project ID:	292575-4
Turnaround time:	10 Day
Date/Time received	Dec 19, 2022 2:16 PM
Eurofins reference	952030

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- N/A Sample containers for volatile analysis received with zero headspace.
- ✕ Split sample sent to requested external lab.
- ✕ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Analysis amended as requested in email.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : or by email: SaviniSuduweli@eurofins.com

Results will be delivered electronically via email to - All Invoices - ABTF_ENVI_Invoices@coffey.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 952030
Phone: 03 9290 7000
Fax:

Received: Dec 19, 2022 2:16 PM
Due: Jan 5, 2023
Priority: 10 Day
Contact Name: - All Invoices

Project Name: WSA SBT
Project ID: 292575-4

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Metals M8 filtered	Eurofins Suite B1	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs)	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X			X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
External Laboratory																							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																		
1	QC14-151222-JP	Dec 15, 2022		Water	S22-De0047125																X		
2	QC16-151222-JP	Dec 15, 2022		Water	S22-De0047126	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Certificate of Analysis

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Emma Stephens**

Report **952030-W**
Project name WSA SBT
Project ID 292575-4
Received Date Dec 19, 2022

Client Sample ID			**QC14-151222-JP**	**QC16-151222-JP**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S22-De0047125**	**S22-De0047126**
Date Sampled			**Dec 15, 2022**	**Dec 15, 2022**
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	-
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	-
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	-
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	-
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	-
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	-
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	-
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	-
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	-
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	-
13C4-PFBA (surr.)	1	%	76	-
13C5-PFPeA (surr.)	1	%	81	-
13C5-PFHxA (surr.)	1	%	98	-
13C4-PFHpA (surr.)	1	%	101	-
13C8-PFOA (surr.)	1	%	117	-
13C5-PFNA (surr.)	1	%	95	-
13C6-PFDA (surr.)	1	%	93	-
13C2-PFUnDA (surr.)	1	%	99	-
13C2-PFDoDA (surr.)	1	%	134	-
13C2-PFTeDA (surr.)	1	%	85	-
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	-
13C8-FOSA (surr.)	1	%	16	-
D3-N-MeFOSA (surr.)	1	%	11	-

Client Sample ID			QC14-151222-JP	QC16-151222-JP
Sample Matrix			Water	Water
Eurofins Sample No.			S22-De0047125	S22-De0047126
Date Sampled			Dec 15, 2022	Dec 15, 2022
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
D5-N-EtFOSA (surr.)	1	%	12	-
D7-N-MeFOSE (surr.)	1	%	9.7	-
D9-N-EtFOSE (surr.)	1	%	12	-
D5-N-EtFOSAA (surr.)	1	%	131	-
D3-N-MeFOSAA (surr.)	1	%	92	-
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	-
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	-
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	-
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	-
13C3-PFBS (surr.)	1	%	121	-
18O2-PFHxS (surr.)	1	%	110	-
13C8-PFOS (surr.)	1	%	107	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	-
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	-
13C2-4:2 FTSA (surr.)	1	%	108	-
13C2-6:2 FTSA (surr.)	1	%	149	-
13C2-8:2 FTSA (surr.)	1	%	90	-
13C2-10:2 FTSA (surr.)	1	%	124	-
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	-
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	-
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	-
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	-
Total Recoverable Hydrocarbons				
TRH C6-C9	0.02	mg/L	-	< 0.02
TRH C10-C14	0.05	mg/L	-	2.1
TRH C15-C28	0.1	mg/L	-	1.2
TRH C29-C36	0.1	mg/L	-	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	-	3.3
TRH C6-C10	0.02	mg/L	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	1.6
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	1.6
TRH >C16-C34	0.1	mg/L	-	0.8
TRH >C34-C40	0.1	mg/L	-	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	-	2.4

Client Sample ID			QC14-151222-JP	QC16-151222-JP
Sample Matrix			Water	Water
Eurofins Sample No.			S22-De0047125	S22-De0047126
Date Sampled			Dec 15, 2022	Dec 15, 2022
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.001	mg/L	-	< 0.001
Toluene	0.001	mg/L	-	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	103
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.01	mg/L	-	< 0.01
Ammonia (as N)	0.01	mg/L	-	2.5
Chloride	1	mg/L	-	11000
Conductivity (at 25 °C)	10	uS/cm	-	22000
Nitrate & Nitrite (as N)	0.05	mg/L	-	< 0.05
Nitrate (as N)	0.02	mg/L	-	0.03
Nitrite (as N)	0.02	mg/L	-	< 0.02
pH (at 25 °C)	0.1	pH Units	-	7.1
Phosphate total (as P)	0.01	mg/L	-	0.13
Phosphorus reactive (as P)	0.05	mg/L	-	< 0.05
Sulphate (as SO4)	2	mg/L	-	430
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	-	17000
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	-	3.9
Total Nitrogen (as N)*	0.2	mg/L	-	3.9
Total Organic Carbon	5	mg/L	-	8.8
Alkalinity (speciated)				
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	-	11000
Carbonate Alkalinity (as CaCO3)	10	mg/L	-	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	-	< 20
Total Alkalinity (as CaCO3)	20	mg/L	-	11000
Heavy Metals				
Aluminium	0.05	mg/L	-	3.2
Aluminium (filtered)	0.05	mg/L	-	< 0.05
Arsenic (filtered)	0.001	mg/L	-	0.010
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002
Chromium (filtered)	0.001	mg/L	-	< 0.001
Cobalt	0.001	mg/L	-	0.007
Cobalt (filtered)	0.001	mg/L	-	0.004
Copper (filtered)	0.001	mg/L	-	< 0.001
Iron	0.05	mg/L	-	13
Iron (filtered)	0.05	mg/L	-	3.3
Lead (filtered)	0.001	mg/L	-	< 0.001
Manganese	0.005	mg/L	-	0.42
Manganese (filtered)	0.005	mg/L	-	0.24
Mercury (filtered)	0.0001	mg/L	-	< 0.0001
Nickel (filtered)	0.001	mg/L	-	0.004
Zinc (filtered)	0.005	mg/L	-	0.005

Client Sample ID			QC14-151222-JP	QC16-151222-JP
Sample Matrix			Water	Water
Eurofins Sample No.			S22-De0047125	S22-De0047126
Date Sampled			Dec 15, 2022	Dec 15, 2022
Test/Reference	LOR	Unit		
Alkali Metals				
Calcium	0.5	mg/L	-	220
Magnesium	0.5	mg/L	-	690
Potassium	0.5	mg/L	-	45
Sodium	0.5	mg/L	-	4500

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Dec 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Dec 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Dec 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Dec 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Dec 20, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Dec 22, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 22, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 22, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 22, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Dec 22, 2022	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Sydney	Dec 22, 2022	28 Days
- Method: E052 Total Phosphate (as P)			
Phosphorus reactive (as P)	Sydney	Dec 22, 2022	28 Days
- Method: E052 Reactive phosphate (as P)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 22, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	Jan 09, 2023	28 Days
- Method: In-house method LTM-INO-4090 Chloride by Discrete Analyser			
- Method: LTM-INO-4270 Anions by Ion Chromatography			
Sulphate (as SO4)	Sydney	Dec 22, 2022	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Melbourne	Jan 09, 2023	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Conductivity (at 25 °C)	Sydney	Dec 22, 2022	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	Dec 22, 2022	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Total Organic Carbon	Melbourne	Dec 22, 2022	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Heavy Metals	Sydney	Dec 22, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

Description	Testing Site	Extracted	Holding Time
Heavy Metals (filtered)	Sydney	Dec 22, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Dec 21, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Dec 22, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Sydney	Dec 22, 2022	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 952030
Phone: 03 9290 7000
Fax:

Received: Dec 19, 2022 2:16 PM
Due: Jan 5, 2023
Priority: 10 Day
Contact Name: - All Invoices

Project Name: WSA SBT
Project ID: 292575-4

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Total Organic Carbon	Metals M8 filtered	Eurofins Suite B1	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs)	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																X			X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
External Laboratory																							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																		
1	QC14-151222-JP	Dec 15, 2022		Water	S22-De0047125																X		
2	QC16-151222-JP	Dec 15, 2022		Water	S22-De0047126	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	91			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	96			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	94			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	95			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	95			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	96			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	101			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorododecanoic acid (PFDoDA)	%	98			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	100			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	95			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	114			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	108			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	97			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	99			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	93			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	94			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	95			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	95			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	95			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	86			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	91			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	99			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	96			50-150	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	71			70-130	Pass	
TRH C10-C14	%	78			70-130	Pass	
TRH C6-C10	%	71			70-130	Pass	
TRH >C10-C16	%	74			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	88			70-130	Pass	
Toluene	%	82			70-130	Pass	
Ethylbenzene	%	76			70-130	Pass	
m&p-Xylenes	%	86			70-130	Pass	
o-Xylene	%	80			70-130	Pass	
Xylenes - Total*	%	84			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	99			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	96			70-130	Pass	
Conductivity (at 25 °C)	%	81			70-130	Pass	
Nitrate & Nitrite (as N)	%	104			70-130	Pass	
Nitrate (as N)	%	104			70-130	Pass	
Nitrite (as N)	%	97			70-130	Pass	
Phosphate total (as P)	%	96			70-130	Pass	
Phosphorus reactive (as P)	%	103			70-130	Pass	
Sulphate (as SO4)	%	104			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	101			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	88			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Organic Carbon			%	106			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Aluminium			%	92			80-120	Pass	
Aluminium (filtered)			%	88			80-120	Pass	
Arsenic (filtered)			%	91			80-120	Pass	
Cadmium (filtered)			%	93			80-120	Pass	
Chromium (filtered)			%	91			80-120	Pass	
Cobalt			%	93			80-120	Pass	
Cobalt (filtered)			%	93			80-120	Pass	
Copper (filtered)			%	93			80-120	Pass	
Iron			%	92			80-120	Pass	
Iron (filtered)			%	91			80-120	Pass	
Lead (filtered)			%	93			80-120	Pass	
Manganese			%	92			80-120	Pass	
Manganese (filtered)			%	91			80-120	Pass	
Mercury (filtered)			%	107			80-120	Pass	
Nickel (filtered)			%	92			80-120	Pass	
Zinc (filtered)			%	95			80-120	Pass	
LCS - % Recovery									
Alkali Metals									
Calcium			%	98			80-120	Pass	
Magnesium			%	112			80-120	Pass	
Potassium			%	111			80-120	Pass	
Sodium			%	114			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S22-De0047097	NCP	%	93			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S22-De0047097	NCP	%	95			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S22-De0047097	NCP	%	96			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-De0047097	NCP	%	97			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S22-De0047097	NCP	%	94			50-150	Pass	
Perfluorononanoic acid (PFNA)	S22-De0047097	NCP	%	95			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S22-De0047097	NCP	%	99			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-De0047097	NCP	%	101			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-De0047097	NCP	%	97			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-De0047097	NCP	%	135			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-De0047097	NCP	%	102			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S22-De0047097	NCP	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-De0047097	NCP	%	115			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-De0047097	NCP	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S22-De0047097	NCP	%	97			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S22-De0047097	NCP	%	92			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-De0047097	NCP	%	96			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-De0047097	NCP	%	97			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S22-De0047097	NCP	%	95			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-De0047097	NCP	%	103			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-De0047097	NCP	%	85			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-De0047097	NCP	%	92			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S22-De0047097	NCP	%	88			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-De0047097	NCP	%	93			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-De0047097	NCP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-De0047097	NCP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-De0047097	NCP	%	102			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-De0047097	NCP	%	98			50-150	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	N22-De0039037	NCP	%	114			70-130	Pass	
TRH >C10-C16	N22-De0039037	NCP	%	105			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M22-De0046882	NCP	%	99			70-130	Pass	
Nitrate & Nitrite (as N)	M22-De0046882	NCP	%	94			70-130	Pass	
Nitrate (as N)	M22-De0046882	NCP	%	94			70-130	Pass	
Phosphate total (as P)	S22-De0045962	NCP	%	103			70-130	Pass	
Phosphorus reactive (as P)	R22-De0043456	NCP	%	108			70-130	Pass	
Sulphate (as SO4)	S22-De0043514	NCP	%	102			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M22-De0050232	NCP	%	72			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	R22-De0043455	NCP	%	93			75-125	Pass	
Aluminium (filtered)	S22-De0047126	CP	%	87			75-125	Pass	
Arsenic (filtered)	S22-De0047126	CP	%	96			75-125	Pass	
Cadmium (filtered)	S22-De0047126	CP	%	85			75-125	Pass	
Chromium (filtered)	S22-De0047126	CP	%	85			75-125	Pass	
Cobalt	R22-De0043455	NCP	%	90			75-125	Pass	
Cobalt (filtered)	S22-De0047126	CP	%	82			75-125	Pass	
Copper (filtered)	S22-De0047126	CP	%	80			75-125	Pass	
Iron	R22-De0043455	NCP	%	92			75-125	Pass	
Lead (filtered)	S22-De0047126	CP	%	80			75-125	Pass	
Manganese	R22-De0043455	NCP	%	94			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury (filtered)	S22-De0047126	CP	%	100			75-125	Pass	
Nickel (filtered)	S22-De0047126	CP	%	80			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	R22-De0043455	NCP	%	96			75-125	Pass	
Magnesium	R22-De0043455	NCP	%	104			75-125	Pass	
Potassium	R22-De0043455	NCP	%	111			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S22-De0044274	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S22-De0044274	NCP	ug/L	0.02	0.02	12	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-De0047088	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-De0047088	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S22-De0047088	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-De0047088	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-De0047088	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S22-De0047088	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S22-De0047088	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-De0047088	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-De0047088	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-De0050934	NCP	ug/L	0.02	0.02	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S22-De0050934	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-De0050934	NCP	ug/L	0.05	0.04	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-De0047088	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-De0047088	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-De0046869	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S22-De0050885	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S22-De0050885	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S22-De0050885	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S22-De0046869	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S22-De0050885	NCP	mg/L	< 0.05	0.05	200	30%	Fail	Q15
TRH >C16-C34	S22-De0050885	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S22-De0050885	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-De0046869	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-De0046869	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S22-De0046869	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-De0046869	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S22-De0046869	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-De0046869	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S22-De0046869	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S22-De0047126	CP	mg/L	2.5	2.5	<1	30%	Pass	
Conductivity (at 25 °C)	S22-De0052275	NCP	uS/cm	43000	42000	3.5	30%	Pass	
Nitrate & Nitrite (as N)	S22-De0047126	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrate (as N)	S22-De0047126	CP	mg/L	0.03	0.03	3.2	30%	Pass	
Nitrite (as N)	S22-De0047126	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	S22-De0047126	CP	mg/L	0.13	0.13	1.3	30%	Pass	
Phosphorus reactive (as P)	R22-De0043455	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Sulphate (as SO4)	S22-De0043524	NCP	mg/L	2.3	2.1	12	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	S22-De0047126	CP	mg/L	17000	17000	<1	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M22-De0050910	NCP	mg/L	< 0.2	0.3	160	30%	Fail	Q15
Total Organic Carbon	M22-De0050858	NCP	mg/L	11	8.7	25	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S22-De0047126	CP	mg/L	3.2	3.1	1.7	30%	Pass	
Aluminium (filtered)	R22-De0043456	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic (filtered)	R22-De0043456	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	R22-De0043456	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	R22-De0043456	NCP	mg/L	< 0.001	0.001	16	30%	Pass	
Cobalt	S22-De0047126	CP	mg/L	0.007	0.007	<1	30%	Pass	
Cobalt (filtered)	R22-De0043456	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	R22-De0043456	NCP	mg/L	0.001	0.001	25	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron	S22-De0047126	CP	mg/L	13	14	1.7	30%	Pass	
Iron (filtered)	R22-De0043456	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead (filtered)	R22-De0043456	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S22-De0047126	CP	mg/L	0.42	0.43	<1	30%	Pass	
Manganese (filtered)	R22-De0043456	NCP	mg/L	0.042	0.040	4.4	30%	Pass	
Mercury (filtered)	R22-De0043456	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	R22-De0043456	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	R22-De0043456	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	R22-De0043458	NCP	mg/L	12	12	<1	30%	Pass	
Magnesium	R22-De0043458	NCP	mg/L	5.8	5.4	6.3	30%	Pass	
Potassium	R22-De0043458	NCP	mg/L	4.6	4.5	2.9	30%	Pass	
Sodium	R22-De0043458	NCP	mg/L	16	14	12	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Savini Suduweli	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Dilani Samarakoon	Senior Analyst-Inorganic
Fang Yee Tan	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)	NOTES
1	RB-160123-JF	16/1	2.00	Water	Bottles	Std (5-day)				X				
2	SBT-CM-1022			Water	Bottles	Std (5-day)	X							
3	SBT-GW-1016-U			Water	Bottles	Std (5-day)		X						
4	SBT-GW-1016-M			Water	Bottles	Std (5-day)		X						
5	SBT-GW-1016-L			Water	Bottles	Std (5-day)		X						
6	SMGW-BM-B123			Water	Bottles	Std (5-day)		X						
7	QC17-160123-JF			Water	Bottles	Std (5-day)	X							
—	QC18-160123-JF			Water	Bottles	Std (5-day)	X							SEND TO EUROFINS
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								
				Water	Bottles	Std (5-day)								

Environmental Division Sydney
Work Order Reference
ES2301276
Telephone : +61-2-8784 8555

RELINQUISHED BY

Name: Jack F — Date: 16/1/23
Coffey — Time: 2.00

Name: — Date:
Company: — Time:

RECEIVED BY

Name: Dom — Date: 16/1/23
Company: ALS — Time: 1:50pm — 12.8°C

Name: Jack — Date: 16/01/23
Company: ALS — Time: 1944

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

A.B. 12:50pm 12/1

2.3°C chilled courier

HT

#956804

Subcon / Forward Lab / Split WO
Lab / Analysis: Eurofins - QC18_160123_JF
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

RE: Eurofins Sample Receipt Advice - Report 956804 : Site WSA SBT (SYDGE292575-4)

Flanagan, Jack <JACK.FLANAGAN@tetratech.com>

Thu 2023-01-19 7:12 PM

To: #AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

Cc: Stephens, Emma <Emma.Stephens@tetratech.com>;Savini Suduweli Kondage <SaviniSuduweli@eurofins.com>;O'Farrell, Casey <Casey.OFarrell@tetratech.com>

> **CAUTION:** EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.
>
> Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Hi Eurofins,

For sample: QC18_160123_JF , could I please have the following analysis completed:

Analysis:

- General water quality (pH, EC, TDS)
- TOC
- Major ions (Ca, Mg, Na, K, Cl, SO4, Alkalinity)
- Dissolved metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)
- Total metals (Al, Co, Fe, Mn)
- Nutrients (Total Nitrogen + NO2 + NO3 + NH3 + Total P + Reactive P)
- TRH/BTEXN

PLACE HOLDERS – only to be analysed if requested following review of results:

- CrVI + CrIII (to be requested following review of Cr(III+VI) results)
- Silica-Gel Clean-up (to be analysed where TRH>C10 is above detect)

Also another request, in future, is it possible to have all email addresses on the COC included in receiving the SRN's and results, it is important that we are all in the loop. A reminder of the emails:

Jack.flanagan@tetratech.com
Emma.stephens@tetratech.com
Casey.ofarrell@tetratech.com
ESDATLabReports@coffey.com

Thanks in advance, let me know if there are any issues,

Jack Flanagan, B.Env I M.Res | Environmental Scientist
Direct **+61** 457 645 931 | jack.flanagan@tetratech.com

Tetra Tech Coffey | *Leading with Science®*
Level 19; Tower B; Citadel Tower; 799 Pacific Highway; Chatswood| tetratech.com | tetratechcoffey.com

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I acknowledge the Gamaragal people on whose country I live and work. I pay my respects to their Elders past, present, emerging and future. Tetra Tech Coffey recognises Aboriginal and Torres Strait Islanders as the first peoples of Australia, and we respect their cultural heritage, traditional knowledge and customs associated with their ancestral lands and waters. Through this acknowledgement we commit to ongoing learning and understanding on our journey to reconciliation.

Artist: Chloe Little

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Thursday, 19 January 2023 3:25 PM
To: Stephens, Emma <Emma.Stephens@tetratech.com>
Subject: Eurofins Sample Receipt Advice - Report 956804 : Site WSA SBT (SYDGE292575-4)

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Dear Valued Client,
Please confirm required analysis.
Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible to make certain that they get changed.

View our latest EnviroNotes
How did we do? Provide your feedback here

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www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	4/52 Industrial Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield East NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	PO Box 60 Wickham 2293
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	Tel: +61 2 4968 8448
NATA# 1261 Site# 1254	NATA# 1261 Site# 1254	NATA# 1261 Site# 18217		NATA# 1261 Site# 20794	NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	Emma Stephens
Project name:	WSA SBT
Project ID:	SYDGE292575-4
Turnaround time:	5 Day
Date/Time received	Jan 19, 2023 7:12 PM
Eurofins reference	956804

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

To be analysed per request.
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : or by email: SaviniSuduweli@eurofins.com

Results will be delivered electronically via email to Emma Stephens - emma.stephens@tetratech.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay, Southbank VIC 3006

Order No.:
Report #: 956804
Phone: 03 9290 7000
Fax:

Received: Jan 19, 2023 7:12 PM
Due: Jan 30, 2023
Priority: 5 Day
Contact Name: Emma Stephens

Project Name: WSA SBT
Project ID: SYDGE292575-4

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Copper (filtered)	Iron	Iron (filtered)	Lead (filtered)	Manganese	Manganese (filtered)	Mercury (filtered)	Nickel (filtered)	pH (at 25 °C)	Total Organic Carbon	Zinc (filtered)	Eurofins Suite B1	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																							X		X	X	X		X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
External Laboratory																													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																								
1	QC18_160123_JF	Jan 16, 2023		Water	S23-Ja0024077	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Attention: **Emma Stephens**

Report **956804-W**
Project name WSA SBT
Project ID SYDGE292575-4
Received Date Jan 19, 2023

Client Sample ID			**QC18_160123_JF**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-Ja0024077**
Date Sampled			**Jan 16, 2023**
Test/Reference	LOR	Unit	
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	61
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	0.07
TRH C15-C28	0.1	mg/L	0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	0.17
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	0.1
Ammonia (as N)	0.01	mg/L	0.82
Chloride	1	mg/L	420
Conductivity (at 25 °C)	10	uS/cm	2300
Nitrate & Nitrite (as N)	0.05	mg/L	0.33
Nitrate (as N)	0.02	mg/L	0.07
Nitrite (as N)	0.02	mg/L	0.26
pH (at 25 °C)	0.1	pH Units	6.3
Phosphate total (as P)	0.01	mg/L	0.05
Sulphate (as SO4)	2	mg/L	370
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	1400
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.5
Total Nitrogen (as N)*	0.1	mg/L	2.83
Total Organic Carbon	5	mg/L	< 5

Client Sample ID			QC18_160123_JF
Sample Matrix			**Water**
Eurofins Sample No.			**S23-Ja0024077**
Date Sampled			**Jan 16, 2023**
Test/Reference	LOR	Unit	
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	96
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	96
Heavy Metals			
Aluminium	0.05	mg/L	2.7
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic (filtered)	0.001	mg/L	0.003
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	0.014
Cobalt (filtered)	0.001	mg/L	0.017
Copper (filtered)	0.001	mg/L	< 0.001
Iron	0.05	mg/L	4.4
Iron (filtered)	0.05	mg/L	1.3
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	0.16
Manganese (filtered)	0.005	mg/L	0.16
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	0.007
Zinc (filtered)	0.005	mg/L	0.032
Alkali Metals			
Calcium	0.5	mg/L	17
Magnesium	0.5	mg/L	18
Potassium	0.5	mg/L	4.2
Sodium	0.5	mg/L	360

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B1			
BTEX	Sydney	Jan 20, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons	Sydney	Jan 20, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 20, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 20, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 20, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P			
Ammonia (as N)	Sydney	Jan 20, 2023	28 Days
- Method: LTM-INO-4200 Ammonia by Discrete Analyser			
Nitrate & Nitrite (as N)	Melbourne	Jan 24, 2023	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Jan 24, 2023	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Jan 24, 2023	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Sydney	Jan 20, 2023	28 Days
- Method: E052 Total Phosphate (as P)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Jan 24, 2023	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	Jan 20, 2023	28 Days
- Method: LTM-INO-4270 Anions by Ion Chromatography			
Sulphate (as SO4)	Sydney	Jan 20, 2023	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Melbourne	Jan 24, 2023	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Conductivity (at 25 °C)	Sydney	Jan 20, 2023	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	Jan 20, 2023	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Total Organic Carbon	Melbourne	Jan 24, 2023	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Heavy Metals	Sydney	Jan 20, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Sydney	Jan 20, 2023	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Mercury (filtered)	Sydney	Jan 20, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Jan 20, 2023	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Sydney	Jan 20, 2023	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 956804
Phone: 03 9290 7000
Fax:

Received: Jan 19, 2023 7:12 PM
Due: Jan 30, 2023
Priority: 5 Day
Contact Name: Emma Stephens

Project Name: WSA SBT
Project ID: SYDGE292575-4

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Copper (filtered)	Iron	Iron (filtered)	Lead (filtered)	Manganese	Manganese (filtered)	Mercury (filtered)	Nickel (filtered)	pH (at 25 °C)	Total Organic Carbon	Zinc (filtered)	Eurofins Suite B1	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																							X		X	X	X		X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
External Laboratory																													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																								
1	QC18_160123_JF	Jan 16, 2023		Water	S23-Ja0024077	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Chloride	mg/L	< 1			1	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	-0.00023			0.01	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	106			70-130	Pass	
Toluene	%	110			70-130	Pass	
Ethylbenzene	%	106			70-130	Pass	
m&p-Xylenes	%	121			70-130	Pass	
o-Xylene	%	108			70-130	Pass	
Xylenes - Total*	%	117			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	97			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	109			70-130	Pass	
TRH C10-C14	%	79			70-130	Pass	
TRH C6-C10	%	109			70-130	Pass	
TRH >C10-C16	%	74			70-130	Pass	
LCS - % Recovery							
Chloride	%	96			70-130	Pass	
Conductivity (at 25 °C)	%	93			70-130	Pass	
Nitrate & Nitrite (as N)	%	120			70-130	Pass	
Nitrate (as N)	%	120			70-130	Pass	
Nitrite (as N)	%	103			70-130	Pass	
Phosphate total (as P)	%	109			70-130	Pass	
Sulphate (as SO4)	%	91			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	98			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	88			70-130	Pass	
Total Organic Carbon	%	93			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	78			70-130	Pass	
Total Alkalinity (as CaCO3)	%	94			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	104			80-120	Pass	
Aluminium (filtered)	%	102			80-120	Pass	
Arsenic (filtered)	%	102			80-120	Pass	
Cadmium (filtered)	%	115			80-120	Pass	
Chromium (filtered)	%	102			80-120	Pass	
Cobalt	%	100			80-120	Pass	
Cobalt (filtered)	%	102			80-120	Pass	
Copper (filtered)	%	100			80-120	Pass	
Iron	%	100			80-120	Pass	
Iron (filtered)	%	101			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead (filtered)			%	100			80-120	Pass	
Manganese			%	105			80-120	Pass	
Manganese (filtered)			%	101			80-120	Pass	
Mercury (filtered)			%	101			80-120	Pass	
Nickel (filtered)			%	101			80-120	Pass	
Zinc (filtered)			%	99			80-120	Pass	
LCS - % Recovery									
Alkali Metals									
Calcium			%	99			80-120	Pass	
Magnesium			%	117			80-120	Pass	
Potassium			%	117			80-120	Pass	
Sodium			%	120			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S23-Ja0025844	NCP	%	98			70-130	Pass	
TRH >C10-C16	S23-Ja0025844	NCP	%	92			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S23-Ja0024383	NCP	%	96			70-130	Pass	
Nitrate & Nitrite (as N)	S23-Ja0026739	NCP	%	89			70-130	Pass	
Nitrate (as N)	S23-Ja0026739	NCP	%	88			70-130	Pass	
Phosphate total (as P)	S23-Ja0027080	NCP	%	106			70-130	Pass	
Sulphate (as SO4)	S23-Ja0024383	NCP	%	90			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	S23-Ja0030033	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S23-Ja0026286	NCP	%	104			75-125	Pass	
Aluminium (filtered)	R23-Ja0017279	NCP	%	92			75-125	Pass	
Arsenic (filtered)	R23-Ja0017279	NCP	%	92			75-125	Pass	
Cadmium (filtered)	R23-Ja0017279	NCP	%	96			75-125	Pass	
Chromium (filtered)	R23-Ja0017279	NCP	%	95			75-125	Pass	
Cobalt	S23-Ja0026286	NCP	%	101			75-125	Pass	
Cobalt (filtered)	R23-Ja0017279	NCP	%	92			75-125	Pass	
Copper (filtered)	R23-Ja0017279	NCP	%	90			75-125	Pass	
Iron	S23-Ja0026286	NCP	%	98			75-125	Pass	
Iron (filtered)	R23-Ja0017279	NCP	%	92			75-125	Pass	
Lead (filtered)	R23-Ja0017279	NCP	%	93			75-125	Pass	
Manganese	S23-Ja0026286	NCP	%	94			75-125	Pass	
Manganese (filtered)	R23-Ja0017279	NCP	%	91			75-125	Pass	
Mercury (filtered)	R23-Ja0017279	NCP	%	89			75-125	Pass	
Nickel (filtered)	R23-Ja0017279	NCP	%	93			75-125	Pass	
Zinc (filtered)	R23-Ja0017279	NCP	%	94			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S23-Ja0026286	NCP	%	97			75-125	Pass	
Magnesium	S23-Ja0026286	NCP	%	113			75-125	Pass	
Potassium	S23-Ja0026286	NCP	%	117			75-125	Pass	
Sodium	S23-Ja0026286	NCP	%	90			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Ja0028012	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S23-Ja0028012	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S23-Ja0028012	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S23-Ja0028012	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S23-Ja0028012	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S23-Ja0028012	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Ja0028012	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Ja0028012	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S23-Ja0023819	NCP	mg/L	0.14	0.18	26	30%	Pass	
TRH C15-C28	S23-Ja0023819	NCP	mg/L	2.4	2.0	18	30%	Pass	
TRH C29-C36	S23-Ja0023819	NCP	mg/L	0.3	0.2	29	30%	Pass	
TRH C6-C10	S23-Ja0028012	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S23-Ja0023819	NCP	mg/L	0.17	0.21	24	30%	Pass	
TRH >C16-C34	S23-Ja0023819	NCP	mg/L	2.4	2.0	19	30%	Pass	
TRH >C34-C40	S23-Ja0023819	NCP	mg/L	0.2	0.1	35	30%	Fail	Q15
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S23-Ja0017233	NCP	mg/L	36	36	1.0	30%	Pass	
Chloride	S23-Ja0024373	NCP	mg/L	340	340	1.8	30%	Pass	
Conductivity (at 25 °C)	S23-Ja0017265	NCP	uS/cm	810	830	1.8	30%	Pass	
Nitrate & Nitrite (as N)	B23-Ja0026367	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrate (as N)	B23-Ja0026367	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Nitrite (as N)	B23-Ja0026367	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	R23-Ja0014772	NCP	mg/L	0.12	0.12	<1	30%	Pass	
Sulphate (as SO4)	S23-Ja0024373	NCP	mg/L	410	430	2.6	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	S23-Ja0024077	CP	mg/L	1400	1400	1.6	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B23-Ja0027943	NCP	mg/L	25	23	10.0	30%	Pass	
Total Organic Carbon	M23-Ja0034938	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S23-Ja0024381	NCP	mg/L	0.48	0.45	7.4	30%	Pass	
Aluminium (filtered)	S23-Ja0022545	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic (filtered)	S23-Ja0022545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S23-Ja0022545	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S23-Ja0022545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S23-Ja0024381	NCP	mg/L	0.008	0.008	1.5	30%	Pass	
Cobalt (filtered)	S23-Ja0022545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S23-Ja0022545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S23-Ja0024381	NCP	mg/L	0.86	0.91	5.9	30%	Pass	
Iron (filtered)	S23-Ja0022545	NCP	mg/L	0.07	0.07	7.2	30%	Pass	
Lead (filtered)	S23-Ja0022545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S23-Ja0024381	NCP	mg/L	0.27	0.27	2.4	30%	Pass	
Manganese (filtered)	S23-Ja0022545	NCP	mg/L	0.30	0.28	7.4	30%	Pass	
Mercury (filtered)	S23-Ja0022545	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S23-Ja0022545	NCP	mg/L	0.001	< 0.001	35	30%	Fail	Q15
Zinc (filtered)	S23-Ja0022545	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S23-Ja0024381	NCP	mg/L	140	140	<1	30%	Pass	
Magnesium	S23-Ja0024381	NCP	mg/L	130	130	1.2	30%	Pass	
Potassium	S23-Ja0024381	NCP	mg/L	30	30	<1	30%	Pass	
Sodium	S23-Ja0024381	NCP	mg/L	1200	1100	2.8	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Catherine Wilson	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Fang Yee Tan	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: jack.flanagan@tetratech.com

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: Jack Flanagan — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Environmental Division Sydney
Work Order Reference
ES2301641

Telephone : + 61-2-8784 8555

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)			
1	GW02	18/1	2:00	Water	Bottles	Std (5-day)	X									
2	GW01			Water	Bottles	Std (5-day)	X									
3	BH207			Water	Bottles	Std (5-day)	X									
4	BH209			Water	Bottles	Std (5-day)	X									
5	GC19_180123_JF			Water	Bottles	Std (5-day)	X									
—	GC20_180123_JF			Water	Bottles	Std (5-day)	X									
6	RB_180123_JF			Water	Bottles	Std (5-day)				X						Send to Europa
7	TB_180123_JF			Water	Bottles	Std (5-day)					X					
8	SBT-GW-4021			Water	Bottles	Std (5-day)	X									
				Water	Bottles	Std (5-day)										
				Water	Bottles	Std (5-day)										
				Water	Bottles	Std (5-day)										
				Water	Bottles	Std (5-day)										
				Water	Bottles	Std (5-day)										
				Water	Bottles	Std (5-day)										
				Water	Bottles	Std (5-day)										

RELINQUISHED BY

Name: JACK F — Date: 18/1
Coffey — Time: 2:00

Name: — Date:
Company: — Time:

RECEIVED BY

Name: Dom — Date: 18/1
Company: ALS — Time: 2:40pm — 10.9°C

Name: Jack — Date: 18/01/23
Company: AU — Time: 1920

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

*Container Type & Preservation Codes: **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

HT

#957580

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www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	Emma Stephens
Project name:	WSA SBT
Project ID:	SYDGE292575-4
Turnaround time:	5 Day
Date/Time received	Jan 23, 2023 2:40 PM
Eurofins reference	957580

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : or by email: SaviniSuduweli@eurofins.com

Results will be delivered electronically via email to Emma Stephens - emma.stephens@tetratech.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

Global Leader - Results you can trust

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

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1/21 Smallwood Place
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QLD 4172
Tel: +61 7 3902 4600
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4/52 Industrial Drive
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PO Box 60 Wickham 2293
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Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 957580
Phone: 03 9290 7000
Fax:

Received: Jan 23, 2023 2:40 PM
Due: Jan 31, 2023
Priority: 5 Day
Contact Name: Emma Stephens

Project Name: WSA SBT
Project ID: SYDGE292575-4

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Copper (filtered)	Iron	Iron (filtered)	Lead (filtered)	Manganese	Manganese (filtered)	Mercury (filtered)	Nickel (filtered)	pH (at 25 °C)	Total Organic Carbon	Zinc (filtered)	Eurofins Suite B1	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																							X		X	X	X		X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X
External Laboratory																													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																								
1	RB_180123_JF	Jan 18, 2023		Water	S23-Ja0031046	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Attention: **Emma Stephens**

Report **957580-W**
Project name WSA SBT
Project ID SYDGE292575-4
Received Date Jan 23, 2023

Client Sample ID			**RB_180123_JF**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-Ja0031046**
Date Sampled			**Jan 18, 2023**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	67
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
Ammonia (as N)	0.01	mg/L	0.90
Chloride	1	mg/L	6600
Conductivity (at 25 °C)	10	uS/cm	22000
Nitrate & Nitrite (as N)	0.05	mg/L	0.42
Nitrate (as N)	0.02	mg/L	0.29
Nitrite (as N)	0.02	mg/L	0.13
pH (at 25 °C)	0.1	pH Units	7.2
Phosphate total (as P)	0.01	mg/L	1.8
Phosphorus reactive (as P)	0.01	mg/L	0.02
Sulphate (as SO4)	2	mg/L	450
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	13000
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	15

Client Sample ID			RB_180123_JF
Sample Matrix			Water
Eurofins Sample No.			S23-Ja0031046
Date Sampled			Jan 18, 2023
Test/Reference	LOR	Unit	
Total Nitrogen (as N)*	0.2	mg/L	15.42
Total Organic Carbon	5	mg/L	< 5
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	970
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	970
Heavy Metals			
Aluminium	0.05	mg/L	15
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	0.033
Cobalt (filtered)	0.001	mg/L	0.003
Copper (filtered)	0.001	mg/L	< 0.001
Iron	0.05	mg/L	120
Iron (filtered)	0.05	mg/L	0.18
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	6.0
Manganese (filtered)	0.005	mg/L	1.3
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	0.004
Zinc (filtered)	0.005	mg/L	< 0.005
Alkali Metals			
Calcium	0.5	mg/L	330
Magnesium	0.5	mg/L	650
Potassium	0.5	mg/L	20
Sodium	0.5	mg/L	3700

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 25, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 25, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 25, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jan 25, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	Jan 27, 2023	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Jan 27, 2023	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Jan 27, 2023	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Jan 27, 2023	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Melbourne	Jan 27, 2023	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Jan 27, 2023	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Jan 27, 2023	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	Jan 25, 2023	28 Days
- Method: LTM-INO-4270 Anions by Ion Chromatography			
Sulphate (as SO4)	Sydney	Jan 25, 2023	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Melbourne	Jan 27, 2023	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Conductivity (at 25 °C)	Sydney	Jan 25, 2023	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	Jan 25, 2023	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Total Organic Carbon	Melbourne	Jan 27, 2023	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Heavy Metals	Sydney	Jan 25, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Sydney	Jan 25, 2023	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Mercury (filtered)	Sydney	Jan 25, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Jan 25, 2023	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Sydney	Jan 25, 2023	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 957580
Phone: 03 9290 7000
Fax:

Received: Jan 23, 2023 2:40 PM
Due: Jan 31, 2023
Priority: 5 Day
Contact Name: Emma Stephens

Project Name: WSA SBT
Project ID: SYDGE292575-4

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Cobalt	Cobalt (filtered)	Conductivity (at 25 °C)	Copper (filtered)	Iron	Iron (filtered)	Lead (filtered)	Manganese	Manganese (filtered)	Mercury (filtered)	Nickel (filtered)	pH (at 25 °C)	Total Organic Carbon	Zinc (filtered)	Eurofins Suite B1	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254																							X		X	X	X		X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X
External Laboratory																													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																								
1	RB_180123_JF	Jan 18, 2023		Water	S23-Ja0031046	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	101			70-130	Pass	
TRH C10-C14	%	88			70-130	Pass	
TRH C6-C10	%	100			70-130	Pass	
TRH >C10-C16	%	86			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	103			70-130	Pass	
Toluene	%	103			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	109			70-130	Pass	
o-Xylene	%	105			70-130	Pass	
Xylenes - Total*	%	107			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	104			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	90			70-130	Pass	
Chloride	%	118			70-130	Pass	
Conductivity (at 25 °C)	%	101			70-130	Pass	
Nitrate & Nitrite (as N)	%	96			70-130	Pass	
Nitrate (as N)	%	96			70-130	Pass	
Nitrite (as N)	%	102			70-130	Pass	
Phosphate total (as P)	%	101			70-130	Pass	
Phosphorus reactive (as P)	%	81			70-130	Pass	
Sulphate (as SO4)	%	92			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	98			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	91			70-130	Pass	
Total Organic Carbon	%	86			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	70			70-130	Pass	
Total Alkalinity (as CaCO3)	%	92			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	98			80-120	Pass	
Aluminium (filtered)	%	109			80-120	Pass	
Arsenic (filtered)	%	101			80-120	Pass	
Cadmium (filtered)	%	108			80-120	Pass	
Chromium (filtered)	%	111			80-120	Pass	
Cobalt	%	99			80-120	Pass	
Cobalt (filtered)	%	111			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper (filtered)			%	112			80-120	Pass	
Iron			%	99			80-120	Pass	
Iron (filtered)			%	111			80-120	Pass	
Lead (filtered)			%	111			80-120	Pass	
Manganese			%	101			80-120	Pass	
Manganese (filtered)			%	111			80-120	Pass	
Mercury (filtered)			%	112			80-120	Pass	
Nickel (filtered)			%	110			80-120	Pass	
Zinc (filtered)			%	111			80-120	Pass	
LCS - % Recovery									
Alkali Metals									
Calcium			%	98			80-120	Pass	
Magnesium			%	108			80-120	Pass	
Potassium			%	108			80-120	Pass	
Sodium			%	111			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S23-Ja0031107	NCP	%	95			70-130	Pass	
TRH >C10-C16	S23-Ja0031107	NCP	%	88			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M23-Ja0038205	NCP	%	72			70-130	Pass	
Nitrate & Nitrite (as N)	M23-Ja0038205	NCP	%	75			70-130	Pass	
Nitrate (as N)	M23-Ja0038205	NCP	%	75			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	B23-Ja0036252	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S23-Ja0026967	NCP	%	105			75-125	Pass	
Aluminium (filtered)	R23-Ja0026304	NCP	%	100			75-125	Pass	
Arsenic (filtered)	R23-Ja0026304	NCP	%	102			75-125	Pass	
Cadmium (filtered)	R23-Ja0026304	NCP	%	106			75-125	Pass	
Chromium (filtered)	R23-Ja0026304	NCP	%	100			75-125	Pass	
Cobalt	S23-Ja0026967	NCP	%	100			75-125	Pass	
Cobalt (filtered)	R23-Ja0026304	NCP	%	101			75-125	Pass	
Copper (filtered)	R23-Ja0026304	NCP	%	98			75-125	Pass	
Iron	S23-Ja0026967	NCP	%	102			75-125	Pass	
Iron (filtered)	R23-Ja0026304	NCP	%	100			75-125	Pass	
Lead (filtered)	R23-Ja0026304	NCP	%	102			75-125	Pass	
Manganese	S23-Ja0026967	NCP	%	106			75-125	Pass	
Manganese (filtered)	R23-Ja0026304	NCP	%	80			75-125	Pass	
Mercury (filtered)	R23-Ja0026304	NCP	%	110			75-125	Pass	
Nickel (filtered)	R23-Ja0026304	NCP	%	98			75-125	Pass	
Zinc (filtered)	R23-Ja0026304	NCP	%	100			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S23-Ja0026967	NCP	%	103			75-125	Pass	
Magnesium	S23-Ja0026967	NCP	%	108			75-125	Pass	
Potassium	S23-Ja0026967	NCP	%	110			75-125	Pass	
Sodium	S23-Ja0026967	NCP	%	93			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Ja0042818	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S23-Ja0029327	NCP	mg/L	0.05	0.08	53	30%	Fail	Q15
TRH C15-C28	S23-Ja0029327	NCP	mg/L	0.2	0.2	9.3	30%	Pass	
TRH C29-C36	S23-Ja0029327	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S23-Ja0042818	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S23-Ja0029327	NCP	mg/L	0.06	0.08	37	30%	Fail	Q15
TRH >C16-C34	S23-Ja0029327	NCP	mg/L	0.2	0.2	32	30%	Fail	Q15
TRH >C34-C40	S23-Ja0029327	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Ja0042818	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S23-Ja0042818	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S23-Ja0042818	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S23-Ja0042818	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S23-Ja0042818	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S23-Ja0042818	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Ja0042818	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M23-Ja0036535	NCP	mg/L	0.02	0.01	n/a	30%	Pass	
Chloride	S23-Ja0024376	NCP	mg/L	4500	4500	<1	30%	Pass	
Conductivity (at 25 °C)	S23-Ja0030033	NCP	uS/cm	63	59	6.2	30%	Pass	
Nitrate & Nitrite (as N)	M23-Ja0036535	NCP	mg/L	2.1	2.1	1.4	30%	Pass	
Nitrate (as N)	M23-Ja0036535	NCP	mg/L	2.1	2.1	1.3	30%	Pass	
Nitrite (as N)	M23-Ja0036535	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Sulphate (as SO4)	S23-Ja0024376	NCP	mg/L	1300	1200	7.5	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	S23-Ja0030221	NCP	mg/L	3700	3500	4.7	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B23-Ja0036683	NCP	mg/L	1.3	1.4	12	30%	Pass	
Total Organic Carbon	M23-Ja0037615	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium (filtered)	S23-Ja0034995	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic (filtered)	S23-Ja0034995	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S23-Ja0034995	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S23-Ja0034995	NCP	mg/L	0.002	0.002	8.2	30%	Pass	
Cobalt	S23-Ja0029278	NCP	mg/L	0.040	0.029	32	30%	Fail	Q15
Cobalt (filtered)	S23-Ja0034995	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S23-Ja0034995	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S23-Ja0029278	NCP	mg/L	35	34	3.5	30%	Pass	
Iron (filtered)	S23-Ja0034995	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead (filtered)	S23-Ja0034995	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S23-Ja0029278	NCP	mg/L	0.83	0.73	13	30%	Pass	
Manganese (filtered)	S23-Ja0034995	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury (filtered)	S23-Ja0034995	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S23-Ja0034995	NCP	mg/L	0.001	0.002	12	30%	Pass	
Zinc (filtered)	S23-Ja0034995	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S23-Ja0029278	NCP	mg/L	270	260	2.4	30%	Pass	
Magnesium	S23-Ja0029278	NCP	mg/L	16	15	6.5	30%	Pass	
Potassium	S23-Ja0029278	NCP	mg/L	90	83	7.6	30%	Pass	
Sodium	S23-Ja0029278	NCP	mg/L	250	250	1.3	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Savini Suduweli	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Emma Stephens — Email: emma.stephens@tetratech.com — Email: ~~jack.flanagan@tetratech.com~~

Invoices to: general.admin@tetratech.com — Email: casey.ofarrel@tetratech.com — Email: ESDAT_LabReports@coffey.com

Project No: SYDGE292575-4 — Task No:

Project Name: WSA SBT — Laboratory: ALS

Sampler's Name: ~~Jack Flanagan~~ Katie Trevor — Project Manager: Emma Stephens

Quote number (if different to current quoted prices): ~~SY/247/22 V2~~ SY/373/22

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Baseline Monitoring (Reduced Suite)	Baseline Monitoring (Extended Suite)	Baseline Monitoring (Additional Analysis)	Baseline Monitoring (Reduced Suite Rinsate)	Baseline Monitoring (Extended Suite Rinsate)	Baseline Monitoring (Reduced Suite Trip Blank)	Baseline Monitoring (Extended Suite Trip Blank)							NOTES
1	SBT-GW-0001	16/3/23	9:00	Water	Bottles	Std (5-day)		X												
2	SBT-GW-1016-S	↓	↓	Water	Bottles	Std (5-day)		X												
3	SBT-GW-1016-M			Water	Bottles	Std (5-day)		X												
4	SBT-GW-1016-D			Water	Bottles	Std (5-day)		X												
5	SMGW-BH-A122			Water	Bottles	Std (5-day)		X												
6	SMGW-BH-B123			Water	Bottles	Std (5-day)		X												
7	QC23_160323_KT			Water	Bottles	Std (5-day)		X												
~~8~~ *	QC24_160323_KT			Water	Bottles	Std (5-day)		X												Forward to Euro Fins
8	RB_160323_KT			Water	Bottles	Std (5-day)					X									
9	TB_160323_KT			Water	Bottles	Std (5-day)							X							
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														
				Water	Bottles	Std (5-day)														

RELINQUISHED BY

Name: Katie Trevor — Date: 16/3/23
Coffey — Time: 14:30

Name: — Date: →
Company: — Time:

RECEIVED BY

Name: [illegible] — Date: 16/3/23
Company: ALS — Time: 3:10

Name: [illegible] — Date: 17/3
Company: Eurofins — Time: 1:20

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☑ 8.6°
All Documentation is in Proper Order ☑
Samples Received [illegible]
Lab. F

Environmental Division Sydney
Work Order Reference
ES2308792

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Please forward QC24_160323_KT to Eurofins

Subcon / Forward Lab / Split WO
Lab / Analysis: QC24 - 160323 - KT
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No: ES2308792
Attached By PO / [illegible]

973384

HT

Telephone : + 61-2-8784 8555

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

From: Stephens, Emma <Emma.Stephens@tetratech.com>
Sent: Wednesday, 29 March 2023 2:47 PM
To: Savini Suduweli Kondage <SaviniSuduweli@eurofins.com>
Subject: RE: Eurofins Sample Receipt Advice - Report 973384 : Site WSA SBT (SYDGE292575-4)

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.
Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Hi Savini,

The Baseline extended Monitoring Suite is:

- General water quality (pH, EC, TDS)
- TOC
- Major ions (Ca, Mg, Na, K, Cl, SO4, Alkalinity)
- Dissolved metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)
- Total metals (Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn + Hg)
- Nutrients (Total Nitrogen + NO2 + NO3 + NH3 + Total P + Reactive P)
- Poly-Aromatic Hydrocarbons
- VOCs/SVOCs (including TRH/BTEXN)
- OCPs/OPPs
- PFAS short suite

- **PLACE HOLDERS – only to be analysed if requested following review of results**:
  - CrVI + CrIII
  - Silica-Gel Clean-up

Thanks,

Emma Stephens (she/ her) | Senior Environmental Scientist
Direct **+61 3 9290 7094** | Business **+61 3 9290 7000** | Mobile **+61 458 499 700** | emma.stephens@tetratech.com
I am available Monday, Tuesday, Wednesday and Thursday
This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

From: SaviniSuduweli@eurofins.com <SaviniSuduweli@eurofins.com>
Sent: Friday, 24 March 2023 10:42 AM
To: Stephens, Emma <Emma.Stephens@tetratech.com>
Subject: Eurofins Sample Receipt Advice - Report 973384 : Site WSA SBT (SYDGE292575-4)

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Hi Emma,

Can you please advise what analysis is neede for the Baseline Extended Monitoring Suite? Thank you.

Kind regards,

Savini Suduweli Kondage
Analytical Services Manager

Eurofins Environment Testing
6 Monterey Road

DANDENONG SOUTH VIC 3175
AUSTRALIA
Phone: +61 385 645 051
Email: SaviniSuduweli@eurofins.com
Website:[http://]environment.eurofins.com.au
EnviroNote 1079 - PFAS Fingerprinting
EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations

View our latest EnviroNotes

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	Emma Stephens
Project name:	WSA SBT
Project ID:	SYDGE292575-4
Turnaround time:	5 Day
Date/Time received	Mar 29, 2023 2:47 PM
Eurofins reference	973384

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Sample was only received as two 20mL PFAS containers, most analysis unavailable from small sample volume.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : or by email: SaviniSuduweli@eurofins.com

Results will be delivered electronically via email to Emma Stephens - emma.stephens@tetratech.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
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Tel: +61 2 9900 8400
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Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

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Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
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Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: WSA SBT
Project ID: SYDGE292575-4

Order No.:
Report #: 973384
Phone: 03 9290 7000
Fax:

Received: Mar 29, 2023 2:47 PM
Due: Apr 5, 2023
Priority: 5 Day
Contact Name: Emma Stephens

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs) - Short
Sydney Laboratory - NATA # 1261 Site # 18217						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	QC24-160323-KT	Mar 16, 2023		Water	S23-Ma0045744	X
Test Counts						1

eurofins | Environment Testing

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Attention: **Emma Stephens**

Report **973384-W**
Project name WSA SBT
Project ID SYDGE292575-4
Received Date Mar 29, 2023

Client Sample ID			**QC24-160323-KT**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-Ma0045744**
Date Sampled			**Mar 16, 2023**
Test/Reference	LOR	Unit	
Per- and Polyfluoroalkyl Substances (PFASs) - Short			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
13C2-6:2 FTSA (surr.)	1	%	143
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
18O2-PFHxS (surr.)	1	%	111
13C8-PFOS (surr.)	1	%	104
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
13C8-PFOA (surr.)	1	%	107
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs) - Short	Sydney	Apr 04, 2023	28 Days

- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
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Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name:	Tetra Tech Coffey Pty Ltd VIC	**Order No.:**		**Received:**	Mar 29, 2023 2:47 PM
Address:	Level 11, 2 Riverside Quay, Southbank VIC 3006	**Report #:**	973384	**Due:**	Apr 5, 2023
		Phone:	03 9290 7000	**Priority:**	5 Day
		Fax:		**Contact Name:**	Emma Stephens
Project Name:	WSA SBT				
Project ID:	SYDGE292575-4				

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs) - Short
Sydney Laboratory - NATA # 1261 Site # 18217						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	QC24-160323-KT	Mar 16, 2023		Water	S23-Ma0045744	X
Test Counts						1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Per- and Polyfluoroalkyl Substances (PFASs) - Short									
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)			ug/L	< 0.05			0.05	Pass	
Perfluorohexanesulfonic acid (PFHxS)			ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)			ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)			ug/L	< 0.01			0.01	Pass	
LCS - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short									
Perfluorohexanesulfonic acid (PFHxS)			%	107			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	106			50-150	Pass	
Perfluorooctanoic acid (PFOA)			%	120			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1					
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Ap0004178	NCP	%	143			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Ap0004178	NCP	%	116			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Ma0075523	NCP	%	136			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-Ap0004178	NCP	%	146			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Ap0002791	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Ap0004177	NCP	ug/L	4.6	4.9	6.3	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-Ap0004177	NCP	ug/L	0.16	0.17	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.

Authorised by:

Savini Suduweli Analytical Services Manager

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramsen Khoshaba

From: Khaleda Ataei
Sent: Tuesday, 11 April 2023 11:58 AM
To: Ramsen Khoshaba; Fadi Soro
Subject: Sydney Metro WSA - RRO Application - Product Testing

Dear Eurofins,

Please analyse sample Polyfoamer FP - 2% solution (Triplicate) for the following parameters:

Table 2 Analytes

Analytes
8 Metals plus the following
Antimony
Beryllium
Boron
Cobalt
Manganese
Molybdenum
Selenium
Tin
Vanadium
pH
EC
Total sulfur
Total Organic Carbon
PFAS Extended Suite
VOC/SVOC
TRH
TRH silica gel

All reports including invoice is to be sent to Jeremy.wicks@tetratech.com

#979994

Thanks

ALS Environmental will be closed for the ANZAC Day Tuesday 25th April.

Please contact your local client service team/ regional office if you have special requirements during this period.

Kind regards,

Khaleda Ataei
Project Manager, Environmental
Sydney, NSW

O +61 2 8784 8555
D +61 2 8784 8603
Khaleda.Ataei@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

Fadi Soro

From: Ramsen Khoshaba
Sent: Tuesday, 11 April 2023 11:14 AM
To: Fadi Soro
Subject: FW: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

Importance: High

Present
11/4 3:22 pm 5.7°C
Chill
Com

From: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Sent: Tuesday, 11 April 2023 11:11 AM
To: Wisam Marassa <Wisam.Marassa@alsglobal.com>; Ramsen Khoshaba <ramsen.khoshaba@ALSGlobal.com>
Subject: FW: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing
Importance: High

Hi Wisam,

I need an trip sample prepared asap to forward to Eurofins.

Are you able to please have your team to dilute a sample and pass it onto Ramsen? We need 2% solution in %98 percent DI water.

@Ramsen Khoshaba – can you please despatch this sample to Eurofisn today as its pretty urgent?

Thanks

ALS Environmental will be closed for the nominated national public holidays in April: Good Friday 7th April, Easter Monday 10th April, and ANZAC Day Tuesday 25th April. Please contact your local client service team/ regional office if you have special requirements during this period.

Kind regards,

right solutions.
right partner.

Khaleda Ataei
Project Manager, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8603
Khaleda.Ataei@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

From: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Sent: Tuesday, 11 April 2023 11:05 AM
To: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Subject: Re: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

Yes thanks

Get Outlook for iOS

From: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Sent: Tuesday, April 11, 2023 10:59 am
To: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Subject: RE: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

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Hi Jeremy,

I don't see a triplicate ever made as its not listed on the SRN.

Would you like me to prepare one now and send out to Eurofins today?

ALS Environmental will be closed for the nominated national public holidays in April: Good Friday 7th April, Easter Monday 10th April, and ANZAC Day Tuesday 25th April. Please contact your local client service team/ regional office if you have special requirements during this period.

Kind regards,

right solutions.
right partner.

Khaleda Ataei
Project Manager, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8603
Khaleda.Ataei@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

From: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Sent: Tuesday, 11 April 2023 10:47 AM
To: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Subject: RE: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

Hi Khaleda

Can you please confirm if a sample was submitted to Eurofins for analysis. The batch number s ES2310481.

Best regards

Jeremy Wicks | Queensland Practice Leader Site Assessment and Remediation
Direct **+61 7 3239 9357** | Business **+61 7 3239 9300** | Mobile **+61 435 956 733** | jeremy.wicks@tetratech.com

Tetra Tech Coffey | *Leading with Science*
Level 5, 12 Creek Street | Brisbane QLD 4000 Australia | tetratech.com | tetratechcoffey.com

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TETRA TECH

From: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Sent: Tuesday, 21 March 2023 8:55 AM
To: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Cc: Locke, Matthew <Matthew.Locke@tetratech.com>
Subject: RE: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

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Hi Jeremy,

Thanks, I'll advise my team to keep an eye for the rest of these samples.

Could you please help clarify below for me?

1. Should the final product only include %2 of the sample (ACP 143/ SLF 325) and %98 DI water? If we'd like to have a final volume of 500ml, do we need to dilute 10ml of the sample into 490 ml DI water?

2. Since we have only received 2 samples, together with the DI water - there will be a total of 3 samples in the workorder. Please let me know if this is correct

Kind regards,

right solutions.
right partner.

Khaleda Ataei
Project Manager, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8603
Khaleda.Ataei@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

From: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Sent: Tuesday, 21 March 2023 9:49 AM
To: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Cc: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>; Locke, Matthew <Matthew.Locke@tetratech.com>
Subject: FW: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

Hi Khaleda

Please see below. It was my understanding that all of the products had been sent. The products which have been sent to ALS include:

- MBCC MasterRoc ACP 143
- MBCC MasterRoc SLF 325

Can you please commence the testing of these and complete the duplicate/triplicate sample on MBCC MasterRoc SLF 325.

ALS will be receiving the remaining products in the coming weeks.

Best regards

Jeremy Wicks | Queensland Practice Leader Site Assessment and Remediation
Direct **+61 7 3239 9357** | Business **+61 7 3239 9300** | Mobile **+61 435 956 733** | jeremy.wicks@tetratech.com

Tetra Tech Coffey | *Leading with Science*
Level 5, 12 Creek Street | Brisbane QLD 4000 Australia | tetratech.com | tetratechcoffey.com

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TETRA TECH

From: Massimiliano, Terenzi <Massimiliano.Terenzi@cpbg-sbt.com.au>
Sent: Tuesday, 21 March 2023 6:40 AM
To: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Cc: Kline, Emma <Emma.Kline@cpbg-sbt.com.au>; Locke, Matthew <Matthew.Locke@tetratech.com>
Subject: RE: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

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Jeremy,

There is a bit of confusion.

If you look at my initial list the product received were there, but not sure why your table doesn't contains it. Please see below the updated table

Product	Product concentration in water when used during boring
MBCC MasterRoc ACP 143	2%
MBCC MasterRoc ABR 5	2%
MBCC MasterRoc SLF 325	2%
MAPEDRILL M1	Pure, dosage 0.5 kg/m3
MAPEDRILL SV	Pure, dosage 0.5 kg/m3
MAPEDISP FLS	Pure, dosage 0.5 kg/m3
Polyfoamer FP	2%
Polyfoamer FLS	2%

Note that some of the samples are currently being shipped from abroad and should be received in the next week or so.

If you're missing any info of the products listed I'll send it again.

Please let me know,

Massimiliano Terenzi
Tunnel Manager - North

Sydney Metro Western Sydney Airport
Station Boxes and Tunnelling Works

Orchard Hills Office, 100 Kent Road, Orchard Hills, NSW, 2748
M: 0456 811 102
E: massimiliano.terenzi@cpbg-sbt.com.au

From: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Sent: Monday, March 20, 2023 5:52 PM
To: Massimiliano, Terenzi <Massimiliano.Terenzi@cpbg-sbt.com.au>
Cc: Kline, Emma <Emma.Kline@cpbg-sbt.com.au>; Locke, Matthew <matthew.locke@tetratech.com>
Subject: FW: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

CAUTION: This email originated from outside of the Organisation.

Hi Massimiliano

The laboratory has advised that it has received 2 products including:

ACP 143
SLF 325

Can you please confirm which product these are in the following table, and when the remaining products will be sent to the lab.

Product	Product concentration in water when used during boring
Polyfoamer FP	2%
Polyfoamer FLS	2%
WGK Mapedrill CV	**Pure, dosage 0.5 kg/m3**
WGK Polyfoamer FLS	2%
WGK Polyfoamer FP	2%

Declaration WGK Mapedrill M1	**Pure, dosage 0.5 kg/m3**

Best regards

Jeremy Wicks | Queensland Practice Leader Site Assessment and Remediation
Direct **+61 7 3239 9357** | Business **+61 7 3239 9300** | Mobile **+61 435 956 733** | jeremy.wicks@tetratech.com

Tetra Tech Coffey | *Leading with Science*
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TETRA TECH
COFFEY

From: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Sent: Monday, 20 March 2023 3:40 PM
To: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Cc: Locke, Matthew <Matthew.Locke@tetratech.com>
Subject: RE: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

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Hi Jeremy,

Thanks for the instructions. We have only received two bottles with the following ID's:

ACP 143
SLF 325

Just to confirm, should the final product only include %2 of the sample and %98 DI water?

Since we have only received 2 samples, together with the DI water – there will be a total of 3 samples in the workorder. Please let me know if this is not correct

Thanks

Kind regards,

Khaleda Ataei
Project Manager, Environmental
Sydney, NSW

O +61 2 8784 8555
D +61 2 8784 8603
Khaleda.Ataei@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

From: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Sent: Monday, 20 March 2023 11:00 AM
To: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Cc: Locke, Matthew <Matthew.Locke@tetratech.com>; ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>
Subject: FW: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

Hi Khaleda

The dilution instructions for the products provided are summarised in Table 1. Please also prepare/analyse a duplicate sample of Polyfoamer FP and send a triplicate to ALS with the instruction to test it for the analytes in Table 2. In addition to the products can please test a sample of the deionised water used to make up the solutions. Samples are to be tested for the analytes in Table 2. Can you please complete on a 3-day turn around.

Table 1 Dilution Instructions

Product	Product concentration in water when used during boring	Dilution instruction	QA/QC
Polyfoamer FP	2%	Dilute with deionised water* so concentration is 2%	ALS complete a duplicate on the diluted sample, and send a triplicate of the diluted sample to Eurofins. ALS to instruct Eurofins to complete the analytes list above.
Polyfoamer FLS	2%	Dilute with deionised water* so concentration is 2%	
WGK Mapedrill CV	**Pure, dosage 0.5 kg/m3**	Test product neat (no dilution)	

WGK Polyfoamer FLS	2%	Dilute with deionised water* so concentration is 2%	
WGK Polyfoamer FP	2%	Dilute with deionised water* so concentration is 2%	
Declaration WGK Mapedrill M1	**Pure, dosage 0.5 kg/m3**	Test product neat (no dilution)	

*Laboratory certified deionised water

Table 2 Analytes

Analytes
8 Metals plus the following
Antimony
Beryllium
Boron
Cobalt
Manganese
Molybdenum
Selenium
Tin
Vanadium
pH
EC
Total sulfur
Total Organic Carbon
PFAS Extended Suite
VOC/SVOC
TRH
TRH silica gel

Best regards

Jeremy Wicks | Queensland Practice Leader Site Assessment and Remediation
Direct **+61 7 3239 9357** | Business **+61 7 3239 9300** | Mobile **+61 435 956 733** | jeremy.wicks@tetratech.com

Tetra Tech Coffey | *Leading with Science*
Level 5, 12 Creek Street | Brisbane QLD 4000 Australia | tetratech.com | tetratechcoffey.com

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TETRA TECH
COFFEY

From: Massimiliano, Terenzi <Massimiliano.Terenzi@cpbg-sbt.com.au>
Sent: Monday, 20 March 2023 6:13 AM
To: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Subject: RE: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

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Hi Jeremy,

Please see below.

Regards,

Massimiliano Terenzi
Tunnel Manager - North
Sydney Metro Western Sydney Airport
Station Boxes and Tunnelling Works

CPB CONTRACTORS Ghella

Orchard Hills Office, 100 Kent Road, Orchard Hills, NSW, 2748
M: 0456 811 102
E: massimiliano.terenzi@cpbg-sbt.com.au

From: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Sent: Friday, March 17, 2023 5:00 PM
To: Massimiliano, Terenzi <Massimiliano.Terenzi@cpbg-sbt.com.au>
Subject: RE: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

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Hi Massimiliano

The laboratory has received the first batch of products and we will get the testing underway next Monday. We need to get the laboratory to dilute the product in water so replicates the concentration which will be used when tunnel boring.

Can you please confirm the numbers in the table below and add in the missing ones for the Mapedrill products.

Product	Product concentration in water when used during boring
Polyfoamer FP	2%
Polyfoamer FLS	2%
WGK Mapedrill CV	**Pure, dosage 0.5 kg/m3**
WGK Polyfoamer FLS	2%
WGK Polyfoamer FP	2%
Declaration WGK Mapedrill M1	**Pure, dosage 0.5 kg/m3**

Best regards

Jeremy Wicks | Queensland Practice Leader Site Assessment and Remediation
Direct +61 7 3239 9357 | Business +61 7 3239 9300 | Mobile +61 435 956 733 | jeremy.wicks@tetratech.com

Tetra Tech Coffey | *Leading with Science*
Level 5, 12 Creek Street | Brisbane QLD 4000 Australia | tetratech.com | tetratechcoffey.com

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TETRA TECH

From: Khaleda Ataei <khaleda.ataei@ALSGlobal.com>
Sent: Friday, 17 March 2023 12:44 PM
To: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Subject: FW: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

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Hi Jeremy,

We have received below samples today: could you please send through a COC along with Dilution instructions?

Thanks

Kind regards,

right solutions.
right partner.

Khaleda Ataei
Project Manager, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8603
Khaleda.Ataei@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

From: Massimiliano, Terenzi <Massimiliano.Terenzi@cpbg-sbt.com.au>
Sent: Friday, 17 March 2023 1:29 PM
To: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Cc: Kline, Emma <Emma.Kline@cpbg-sbt.com.au>; Ozdil, Ahmet <Ahmet.Ozdil@cpbg-sbt.com.au>; Khaleda Ataei <khaleda.ataei@ALSGlobal.com>; Locke, Matthew <matthew.locke@tetratech.com>; Gunasekera, Sam <Sam.Gunasekera@tetratech.com>
Subject: [EXTERNAL] - RE: Sydney Metro WSA - RRO Application - Product Testing

> You don't often get email from massimiliano.terenzi@cpbg-sbt.com.au. Learn why this is important

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Additional Info and missing SDS received from Mapei.

Regards,

Massimiliano Terenzi
Tunnel Manager - North

Sydney Metro Western Sydney Airport
Station Boxes and Tunnelling Works

Orchard Hills Office, 100 Kent Road, Orchard Hills, NSW, 2748
M: 0456 811 102
E: massimiliano.terenzi@cpbg-sbt.com.au

From: Massimiliano, Terenzi
Sent: Wednesday, March 15, 2023 10:47 AM
To: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Cc: Kline, Emma <Emma.Kline@cpbg-sbt.com.au>; Ozdil, Ahmet <Ahmet.Ozdil@cpbg-sbt.com.au>; Khaleda Ataei <khaleda.ataei@ALSGlobal.com>; Locke, Matthew <matthew.locke@tetratech.com>; Gunasekera, Sam <Sam.Gunasekera@tetratech.com>
Subject: RE: Sydney Metro WSA - RRO Application - Product Testing

I'll pass the info to the suppliers.

Attached SDS and TDS, for the product we'll use:

- MBCC MasterRoc ACP 143 (eco-compability statement attached as well)
- MBCC MasterRoc ABR 5
- MAPEDRILL M1
- MAPEDRILL SV
- MAPEDISP FLS
- Polyfoamer FP (missing SDS, chased)
- Polyfoamer FLS (missing SDS, chased)

Regards,

Massimiliano Terenzi
Tunnel Manager - North

Sydney Metro Western Sydney Airport
Station Boxes and Tunnelling Works

Orchard Hills Office, 100 Kent Road, Orchard Hills, NSW, 2748
M: 0456 811 102

E: massimiliano.terenzi@cpbg-sbt.com.au

From: Wicks, Jeremy <Jeremy.Wicks@tetratech.com>
Sent: Wednesday, March 15, 2023 10:37 AM
To: Massimiliano, Terenzi <Massimiliano.Terenzi@cpbg-sbt.com.au>
Cc: Kline, Emma <Emma.Kline@cpbg-sbt.com.au>; Ozdil, Ahmet <Ahmet.Ozdil@cpbg-sbt.com.au>; Khaleda Ataei <khaleda.ataei@ALSGlobal.com>; Locke, Matthew <matthew.locke@tetratech.com>; Gunasekera, Sam <Sam.Gunasekera@tetratech.com>
Subject: Sydney Metro WSA - RRO Application - Product Testing

CAUTION: This email originated from outside of the Organisation.

Hi Massimiliano

Can you please send the product samples directly to ALS, with attention to Khaleda Ataei. I have spoken with Khaleda and she will be expecting to receive the samples. The SDSs for the products will also need to be provided. Can you also me know when the product samples will be provided so we can arrange the testing of them.

right solutions.
right partner.

Khaleda Ataei
Project Manager, Environmental
Sydney, NSW

O +61 2 8784 8555
D +61 2 8784 8603
Khaleda.Ataei@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

Best regards

Jeremy Wicks | Queensland Practice Leader Site Assessment and Remediation
Direct +61 7 3239 9357 | Business +61 7 3239 9300 | Mobile +61 435 956 733 | jeremy.wicks@tetratech.com

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Level 5, 12 Creek Street | Brisbane QLD 4000 Australia | tetratech.com | tetratechcoffey.com

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Instrument Run

7636882 (WATER)

DA : AQ600 1038Q

ALS

Method Names

Run Created By : Kevin Kumar

		Analyst Signature
EK055G	Ammonia as N by Discrete analyser	

Work Order Specific Remarks

ES2310621	(SINKNI) | Sydney samples are in trays: W-132 SV-096 SV-097 M-001b P-139a DA-023c V-032b V-032c Micro

Run Information

Seq. #	Lab. Sample I.D. / QC	Prep. Source Prep RUN - (CUP)	EK055G										Aliquot / QC I.D	Sub-Matrix: QC product: Screening Methods: remarks
1	PRC: Purple-DP CCB													WATER:
2	PRC: Purple-DP ICV													WATER:
3	PRC: Purple-DP CCV													WATER:
4	PRC: Nitrite Standard													WATER:
5	BLK: MB	7636873 - (1)	Y										QC - 4982071-001	WATER:
6	STD	7636873 - (2)	Y										QC - 4982071-002	LCS NOX/NH3:
7	ES2310621 - 006	7636873 - (3)	Y										AE: Purple 60.0 mL	WATER:
8	DUP : ES2310621-006	7636873 - (4)	Y										QC - 4982071-004	WATER:
9	MS : ES2310621-006	7636873 - (5)	Y										QC - 4982071-005	NH3/NOX SPK
10	PRC: Purple-DP CCB													WATER:
11	PRC: Purple-DP CCV													WATER:
12	PRC: Nitrite Standard													WATER:

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eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Environment Pty Ltd NSW
Contact name:	Jeremy Wicks
Project name:	SYDNEY METRO WSA-RRO APPLICATION-PRODUCT TESTING
Project ID:	ES10481-005-AA
Turnaround time:	3 Day
Date/Time received	Apr 11, 2023 3:22 PM
Eurofins reference	979994

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 5.7 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- **N/A** Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jeremy Wicks - Jeremy.Wicks@coffey.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Environment Pty Ltd NSW email address.

Global Leader - Results you can trust

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Environment Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Order No.:
Report #: 979994
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: Apr 11, 2023 3:22 PM
Due: Apr 14, 2023
Priority: 3 Day
Contact Name: Jeremy Wicks

Project Name: SYDNEY METRO WSA-RRO APPLICATION-PRODUCT TESTING
Project ID: ES10481-005-AA

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Antimony	Beryllium	Boron	Cobalt	Conductivity (at 25 °C)	Manganese	Molybdenum	pH (at 25 °C)	Selenium	Tin	Total Organic Carbon	Vanadium	Metals M8	Total Sulphur Set (as S)	Volatile Organics	TRH (after Silica Gel cleanup)	Semivolatile Organics	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																						X		
External Laboratory																								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																			
1	TRIPLICATE	Mar 29, 2023		Water	S23-Ap0022298	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Certificate of Analysis

Tetra Tech Coffey Environment Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jeremy Wicks**

Report **979994-W**
Project name SYDNEY METRO WSA-RRO APPLICATION-PRODUCT TESTING
Project ID ES10481-005-AA
Received Date Apr 11, 2023

Client Sample ID			G01 **TRIPLICATE**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-Ap0022298**
Date Sampled			**Mar 29, 2023**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 2
TRH C10-C14	0.05	mg/L	42
TRH C15-C28	0.1	mg/L	310
TRH C29-C36	0.1	mg/L	88
TRH C10-C36 (Total)	0.1	mg/L	440
TRH C6-C10	0.02	mg/L	< 2
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 2
TRH >C10-C16	0.05	mg/L	110
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	110
TRH >C16-C34	0.1	mg/L	310
TRH >C34-C40	0.1	mg/L	19
TRH >C10-C40 (total)*	0.1	mg/L	439
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.1
1.1-Dichloroethene	0.001	mg/L	< 0.1
1.1.1-Trichloroethane	0.001	mg/L	< 0.1
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.1
1.1.2-Trichloroethane	0.001	mg/L	< 0.1
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.1
1.2-Dibromoethane	0.001	mg/L	< 0.1
1.2-Dichlorobenzene	0.001	mg/L	< 0.1
1.2-Dichloroethane	0.001	mg/L	< 0.1
1.2-Dichloropropane	0.001	mg/L	< 0.1
1.2.3-Trichloropropane	0.001	mg/L	< 0.1
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.1
1.3-Dichlorobenzene	0.001	mg/L	< 0.1
1.3-Dichloropropane	0.001	mg/L	< 0.1
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.1
1.4-Dichlorobenzene	0.001	mg/L	< 0.1
2-Butanone (MEK)	0.005	mg/L	< 0.5
2-Propanone (Acetone)	0.005	mg/L	< 0.5
4-Chlorotoluene	0.001	mg/L	< 0.1
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.5
Allyl chloride	0.001	mg/L	< 0.1
Benzene	0.001	mg/L	< 0.1

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Client Sample ID			[G01]TRIPLICATE
Sample Matrix			Water
Eurofins Sample No.			S23-Ap0022298
Date Sampled			Mar 29, 2023
Test/Reference	LOR	Unit	
Volatile Organics			
Bromobenzene	0.001	mg/L	< 0.1
Bromochloromethane	0.001	mg/L	< 0.1
Bromodichloromethane	0.001	mg/L	< 0.1
Bromoform	0.001	mg/L	< 0.1
Bromomethane	0.005	mg/L	< 0.5
Carbon disulfide	0.001	mg/L	< 0.1
Carbon Tetrachloride	0.001	mg/L	< 0.1
Chlorobenzene	0.001	mg/L	< 0.1
Chloroethane	0.005	mg/L	< 0.5
Chloroform	0.005	mg/L	0.24
Chloromethane	0.005	mg/L	< 1
cis-1.2-Dichloroethene	0.001	mg/L	< 0.1
cis-1.3-Dichloropropene	0.001	mg/L	< 0.1
Dibromochloromethane	0.001	mg/L	< 0.1
Dibromomethane	0.001	mg/L	< 0.1
Dichlorodifluoromethane	0.005	mg/L	< 0.5
Ethylbenzene	0.001	mg/L	< 0.1
Iodomethane	0.001	mg/L	< 0.2
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.1
m&p-Xylenes	0.002	mg/L	< 0.2
Methylene Chloride	0.005	mg/L	< 0.5
o-Xylene	0.001	mg/L	< 0.1
Styrene	0.001	mg/L	< 0.1
Tetrachloroethene	0.001	mg/L	< 0.1
Toluene	0.001	mg/L	< 0.1
trans-1.2-Dichloroethene	0.001	mg/L	< 0.1
trans-1.3-Dichloropropene	0.001	mg/L	< 0.1
Trichloroethene	0.001	mg/L	< 0.1
Trichlorofluoromethane	0.005	mg/L	< 0.5
Vinyl chloride	0.005	mg/L	< 0.5
Xylenes - Total*	0.003	mg/L	< 0.3
Total MAH*	0.003	mg/L	< 0.2
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.5
4-Bromofluorobenzene (surr.)	1	%	79
Toluene-d8 (surr.)	1	%	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 1
TRH - 2013 NEPM Fractions (after silica gel clean-up)			
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	22
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	100
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	17
TRH >C10-C40 (total) (after silica-gel clean up)*	0.1	mg/L	140
TRH - 1999 NEPM Fractions (after silica gel clean-up)			
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	8.2
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	74
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	52
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	134.2

Client Sample ID			G01 TRIPLICATE
Sample Matrix			Water
Eurofins Sample No.			S23-Ap0022298
Date Sampled			Mar 29, 2023
Test/Reference	LOR	Unit	
Semivolatile Organics			
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.005
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.005
Total PAH*	0.001	mg/L	< 0.001
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.005
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003
2-Fluorobiphenyl (surr.)	1	%	58
2-Methylnaphthalene	0.005	mg/L	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.005
2-Nitroaniline	0.005	mg/L	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01
2-Picoline	0.005	mg/L	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Tribromophenol (surr.)	1	%	78
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
2.6-Dinitrotoluene	0.005	mg/L	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03
4.4'-DDD	0.005	mg/L	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005
a-HCH	0.005	mg/L	< 0.005
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Acetophenone	0.005	mg/L	< 0.005
Aldrin	0.005	mg/L	< 0.005

Client Sample ID			G01 TRIPLICATE
Sample Matrix			Water
Eurofins Sample No.			S23-Ap0022298
Date Sampled			Mar 29, 2023
Test/Reference	LOR	Unit	
Semivolatile Organics			
Aniline	0.005	mg/L	< 0.005
Anthracene	0.001	mg/L	< 0.001
b-HCH	0.005	mg/L	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene N07	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005
Chrysene	0.001	mg/L	< 0.001
d-HCH	0.005	mg/L	< 0.005
Di-n-butyl phthalate	0.005	mg/L	0.049
Di-n-octyl phthalate	0.005	mg/L	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005
Dieldrin	0.005	mg/L	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005
Diphenylamine	0.005	mg/L	< 0.005
Endosulfan I	0.005	mg/L	< 0.005
Endosulfan II	0.005	mg/L	< 0.005
Endosulfan sulphate	0.005	mg/L	< 0.005
Endrin	0.005	mg/L	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005
Endrin ketone	0.005	mg/L	< 0.005
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
g-HCH (Lindane)	0.005	mg/L	< 0.005
Heptachlor	0.005	mg/L	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Methoxychlor	0.005	mg/L	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005
Naphthalene	0.001	mg/L	< 0.001
Nitrobenzene	0.05	mg/L	< 0.05
Nitrobenzene-d5 (surr.)	1	%	86
Pentachlorobenzene	0.005	mg/L	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005
Pentachlorophenol	0.01	mg/L	< 0.01

Client Sample ID			G01 TRIPLICATE
Sample Matrix			Water
Eurofins Sample No.			S23-Ap0022298
Date Sampled			Mar 29, 2023
Test/Reference	LOR	Unit	
Semivolatile Organics			
Phenanthrene	0.001	mg/L	< 0.001
Phenol	0.003	mg/L	< 0.003
Phenol-d6 (surr.)	1	%	33
Pronamide	0.005	mg/L	< 0.005
Pyrene	0.001	mg/L	< 0.001
Trifluralin	0.005	mg/L	< 0.005
Haloethers			
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005
Conductivity (at 25 °C)	10	uS/cm	230
pH (at 25 °C)	0.1	pH Units	6.8
Total Organic Carbon	5	mg/L	1600
Sulphur	0.5	mg/L	180
Heavy Metals			
Antimony	0.005	mg/L	< 0.005
Arsenic	0.001	mg/L	< 0.001
Beryllium	0.001	mg/L	< 0.001
Boron	0.05	mg/L	< 0.05
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Molybdenum	0.005	mg/L	< 0.005
Nickel	0.001	mg/L	< 0.001
Selenium	0.001	mg/L	< 0.001
Tin	0.005	mg/L	< 0.005
Vanadium	0.005	mg/L	< 0.005
Zinc	0.005	mg/L	< 0.005
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.1
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.1
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.1
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.1
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.1
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.1
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	114
13C5-PFPeA (surr.)	1	%	76

Client Sample ID			G01 TRIPLICATE
Sample Matrix			Water
Eurofins Sample No.			S23-Ap0022298
Date Sampled			Mar 29, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
13C5-PFHxA (surr.)	1	%	83
13C4-PFHpA (surr.)	1	%	85
13C8-PFOA (surr.)	1	%	84
13C5-PFNA (surr.)	1	%	26
13C6-PFDA (surr.)	1	%	42
13C2-PFUnDA (surr.)	1	%	44
13C2-PFDoDA (surr.)	1	%	173
13C2-PFTeDA (surr.)	1	%	20
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.1
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.1
13C8-FOSA (surr.)	1	%	62
D3-N-MeFOSA (surr.)	1	%	163
D5-N-EtFOSA (surr.)	1	%	178
D7-N-MeFOSE (surr.)	1	%	132
D9-N-EtFOSE (surr.)	1	%	103
D5-N-EtFOSAA (surr.)	1	%	54
D3-N-MeFOSAA (surr.)	1	%	90
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.1
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.1
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.1
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.1
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.1
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.1
13C3-PFBS (surr.)	1	%	86
18O2-PFHxS (surr.)	1	%	78
13C8-PFOS (surr.)	1	%	51
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.1
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.1
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.1
13C2-4:2 FTSA (surr.)	1	%	82
13C2-6:2 FTSA (surr.)	1	%	80
13C2-8:2 FTSA (surr.)	1	%	25
13C2-10:2 FTSA (surr.)	1	%	123

Client Sample ID			G01 TRIPLICATE
Sample Matrix			Water
Eurofins Sample No.			S23-Ap0022298
Date Sampled			Mar 29, 2023
Test/Reference	LOR	Unit	
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.1
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.1
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.1
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.1
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Apr 13, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Apr 13, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Apr 13, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Apr 13, 2023	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Semivolatile Organics	Sydney	Apr 18, 2023	7 Day
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
- Method: USEPA SW 846 8270			
Conductivity (at 25 °C)	Melbourne	Apr 13, 2023	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Melbourne	Apr 13, 2023	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Total Organic Carbon	Melbourne	Apr 13, 2023	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Sulphur	Melbourne	Apr 20, 2023	7 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon and Phosphorus by ICP-AES			
Heavy Metals	Melbourne	Apr 13, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8	Melbourne	Apr 13, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
TRH - 2013 NEPM Fractions (after silica gel clean-up)	Melbourne	Apr 13, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
TRH - 1999 NEPM Fractions (after silica gel clean-up)	Melbourne	Apr 13, 2023	7 Days
- Method: TRH C6-C36 (Silica Gel Cleanup) - MGT 100A			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Apr 13, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Apr 13, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Apr 13, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Apr 13, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Apr 12, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name:	Tetra Tech Coffey Environment Pty Ltd NSW	**Order No.:**		**Received:**	Apr 11, 2023 3:22 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	979994	**Due:**	Apr 14, 2023
		Phone:	+61 2 9406 1000	**Priority:**	3 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Jeremy Wicks
Project Name:	SYDNEY METRO WSA-RRO APPLICATION-PRODUCT TESTING				
Project ID:	ES10481-005-AA				

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Antimony	Beryllium	Boron	Cobalt	Conductivity (at 25 °C)	Manganese	Molybdenum	pH (at 25 °C)	Selenium	Tin	Total Organic Carbon	Vanadium	Metals M8	Total Sulphur Set (as S)	Volatile Organics	TRH (after Silica Gel cleanup)	Semivolatile Organics	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																						X		
External Laboratory																								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																			
1	TRIPLICATE	Mar 29, 2023		Water	S23-Ap0022298	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2.4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
4.4'-DDD	mg/L	< 0.005			0.005	Pass	
4.4'-DDE	mg/L	< 0.005			0.005	Pass	
4.4'-DDT	mg/L	< 0.005			0.005	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-HCH	mg/L	< 0.005			0.005	Pass	
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
b-HCH	mg/L	< 0.005			0.005	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
d-HCH	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
g-HCH (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Nitrobenzene	mg/L	< 0.05			0.05	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Haloethers							
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Method Blank							
Total Organic Carbon	mg/L	< 5			5	Pass	
Sulphur	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Antimony	mg/L	< 0.005			0.005	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Molybdenum	mg/L	< 0.005			0.005	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Tin	mg/L	< 0.005			0.005	Pass	
Vanadium	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	102			70-130	Pass	
TRH C10-C14	%	120			70-130	Pass	
TRH C6-C10	%	99			70-130	Pass	
TRH >C10-C16	%	120			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	100			70-130	Pass	
1.1.1-Trichloroethane	%	102			70-130	Pass	
1.2-Dichlorobenzene	%	90			70-130	Pass	
1.2-Dichloroethane	%	125			70-130	Pass	
Benzene	%	73			70-130	Pass	
Ethylbenzene	%	81			70-130	Pass	
m&p-Xylenes	%	86			70-130	Pass	
Toluene	%	89			70-130	Pass	
Trichloroethene	%	75			70-130	Pass	
Xylenes - Total*	%	87			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	104			70-130	Pass	
LCS - % Recovery							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	%	120			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	%	120			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	%	74			25-140	Pass	
1.2-Dichlorobenzene	%	79			75-125	Pass	
1.2.4-Trichlorobenzene	%	73			70-130	Pass	
1.4-Dichlorobenzene	%	73			70-130	Pass	
2-Chlorophenol	%	61			25-140	Pass	
2-Methylphenol (o-Cresol)	%	63			25-140	Pass	
2-Nitrophenol	%	72			25-140	Pass	
2.4-Dichlorophenol	%	51			25-140	Pass	
2.4-Dimethylphenol	%	58			25-140	Pass	
2.4-Dinitrophenol	%	62			25-140	Pass	
2.4-Dinitrotoluene	%	89			70-130	Pass	
2.4.5-Trichlorophenol	%	52			25-140	Pass	
2.4.6-Trichlorophenol	%	63			25-140	Pass	
2.6-Dichlorophenol	%	53			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	31			25-140	Pass	
4-Chloro-3-methylphenol	%	68			25-140	Pass	
4-Nitrophenol	%	53			25-140	Pass	
Acenaphthene	%	96			70-130	Pass	
Acenaphthylene	%	95			70-130	Pass	
Anthracene	%	102			70-130	Pass	
Benz(a)anthracene	%	117			70-130	Pass	
Benzo(a)pyrene	%	98			70-130	Pass	
Benzo(b&j)fluoranthene	%	114			70-130	Pass	
Benzo(g.h.i)perylene	%	96			70-130	Pass	
Benzo(k)fluoranthene	%	108			70-130	Pass	
Chrysene	%	111			70-130	Pass	
Dibenz(a.h)anthracene	%	70			70-130	Pass	
Fluoranthene	%	104			70-130	Pass	
Fluorene	%	89			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	90			70-130	Pass	
N-Nitrosodipropylamine	%	99			70-130	Pass	
Naphthalene	%	86			70-130	Pass	
Pentachlorophenol	%	62			25-140	Pass	
Phenanthrene	%	106			70-130	Pass	
Phenol	%	45			25-140	Pass	
Pyrene	%	103			70-130	Pass	
LCS - % Recovery							
Conductivity (at 25 °C)	%	103			70-130	Pass	
Total Organic Carbon	%	121			70-130	Pass	
Sulphur	%	87			80-120	Pass	
LCS - % Recovery							
Heavy Metals							
Antimony	%	97			80-120	Pass	
Arsenic	%	97			80-120	Pass	
Beryllium	%	91			80-120	Pass	
Boron	%	89			80-120	Pass	
Cadmium	%	96			80-120	Pass	
Chromium	%	97			80-120	Pass	
Cobalt	%	98			80-120	Pass	
Copper	%	97			80-120	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	%	96			80-120	Pass	
Manganese	%	98			80-120	Pass	
Mercury	%	88			80-120	Pass	
Molybdenum	%	94			80-120	Pass	
Nickel	%	97			80-120	Pass	
Selenium	%	94			80-120	Pass	
Tin	%	96			80-120	Pass	
Vanadium	%	91			80-120	Pass	
Zinc	%	98			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	86			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	89			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	83			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	82			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	90			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	100			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	99			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	88			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	99			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	77			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	72			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	113			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	77			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	104			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	78			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	63			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	83			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	90			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	82			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	142			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	90			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	53			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	81			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	148			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	79			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	119			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	M23-Ap0023144	NCP	%	135			70-130	Fail	Q08
TRH >C10-C16	M23-Ap0023144	NCP	%	137			70-130	Fail	Q08
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1					
TRH >C10-C16 (after silica gel clean-up)	M23-Ap0005563	NCP	%	109			70-130	Pass	
Spike - % Recovery									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1					
TRH C10-C14 (after silica gel clean-up)	M23-Ap0005563	NCP	%	105			70-130	Pass	
Spike - % Recovery									
				Result 1					
Sulphur	S23-Ap0035443	NCP	%	99			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	M23-Ap0025649	NCP	%	103			75-125	Pass	
Arsenic	M23-Ap0025649	NCP	%	99			75-125	Pass	
Beryllium	M23-Ap0025649	NCP	%	111			75-125	Pass	
Boron	M23-Ap0025649	NCP	%	108			75-125	Pass	
Cadmium	M23-Ap0025649	NCP	%	108			75-125	Pass	
Chromium	M23-Ap0025649	NCP	%	100			75-125	Pass	
Cobalt	M23-Ap0025649	NCP	%	106			75-125	Pass	
Copper	M23-Ap0025649	NCP	%	97			75-125	Pass	
Lead	M23-Ap0025649	NCP	%	106			75-125	Pass	
Manganese	M23-Ap0025649	NCP	%	106			75-125	Pass	
Mercury	M23-Ap0025649	NCP	%	103			75-125	Pass	
Molybdenum	M23-Ap0014928	NCP	%	103			75-125	Pass	
Nickel	M23-Ap0025649	NCP	%	100			75-125	Pass	
Selenium	M23-Ap0014928	NCP	%	95			75-125	Pass	
Tin	M23-Ap0025649	NCP	%	93			75-125	Pass	
Vanadium	M23-Ap0025649	NCP	%	121			75-125	Pass	
Zinc	M23-Ap0025649	NCP	%	81			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-Ap0017630	NCP	%	99			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Ap0017630	NCP	%	90			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-Ap0017630	NCP	%	93			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Ap0017630	NCP	%	86			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-Ap0017630	NCP	%	85			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-Ap0017630	NCP	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-Ap0012325	NCP	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Ap0012325	NCP	%	109			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Ap0012325	NCP	%	103			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Ap0012325	NCP	%	143			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Ap0012325	NCP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-Ap0012325	NCP	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Ap0012325	NCP	%	109			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Ap0012325	NCP	%	80			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Ap0012325	NCP	%	98			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Ap0012325	NCP	%	91			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Ap0012325	NCP	%	101			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Ap0012325	NCP	%	102			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-Ap0017630	NCP	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-Ap0012325	NCP	%	111			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Ap0012325	NCP	%	146			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-Ap0017630	NCP	%	106			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-Ap0017630	NCP	%	91			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Ap0017630	NCP	%	139			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-Ap0017630	NCP	%	66			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Ap0012325	NCP	%	147			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Ap0017630	NCP	%	86			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Ap0017630	NCP	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Ap0017630	NCP	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Ap0012325	NCP	%	104			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	M23-Ap0022758	NCP	mg/L	1.0	2.4	84	30%	Fail	Q15
TRH C15-C28	M23-Ap0022758	NCP	mg/L	180	260	34	30%	Fail	Q15
TRH C29-C36	M23-Ap0022758	NCP	mg/L	170	250	39	30%	Fail	Q15
TRH >C10-C16	M23-Ap0022758	NCP	mg/L	1.1	3.2	94	30%	Fail	Q15
TRH >C16-C34	M23-Ap0022758	NCP	mg/L	310	450	36	30%	Fail	Q15
TRH >C34-C40	M23-Ap0022758	NCP	mg/L	94	140	38	30%	Fail	Q15
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	M23-Ap0018969	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
1-Chloronaphthalene	M23-Ap0018969	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1-Naphthylamine	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2-Dichlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3-Trichlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4-Trichlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3-Dichlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
1.3.5-Trichlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.4-Dichlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chloronaphthalene	M23-Ap0018969	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chlorophenol	M23-Ap0018969	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Methylnaphthalene	M23-Ap0018969	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M23-Ap0018969	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Naphthylamine	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Nitroaniline	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Nitrophenol	M23-Ap0018969	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2-Picoline	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	M23-Ap0018969	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dichlorophenol	M23-Ap0018969	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dimethylphenol	M23-Ap0018969	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	M23-Ap0018969	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2.4-Dinitrotoluene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.4.5-Trichlorophenol	M23-Ap0018969	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	M23-Ap0018969	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	M23-Ap0018969	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.6-Dinitrotoluene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M23-Ap0018969	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
3-Methylcholanthrene	M23-Ap0018969	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3.3'-Dichlorobenzidine	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Aminobiphenyl	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chloro-3-methylphenol	M23-Ap0018969	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Nitrophenol	M23-Ap0018969	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
4.4'-DDD	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDE	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDT	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	M23-Ap0018969	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
a-HCH	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Acenaphthene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acetophenone	B23-Ap0012933	NCP	mg/L	0.008	0.009	7.8	30%	Pass	
Aldrin	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aniline	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Anthracene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
b-HCH	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Benz(a)anthracene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzyl chloride	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Butyl benzyl phthalate	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chrysene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
d-HCH	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-butyl phthalate	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-octyl phthalate	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenz(a.h)anthracene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.j)acridine	M23-Ap0018969	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenzofuran	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dieldrin	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diethyl phthalate	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
Dimethyl phthalate	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethylaminoazobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diphenylamine	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan I	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan II	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan sulphate	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin aldehyde	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin ketone	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Fluoranthene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
g-HCH (Lindane)	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor epoxide	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobutadiene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorocyclopentadiene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachloroethane	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methoxychlor	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodibutylamine	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodipropylamine	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosopiperidine	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Naphthalene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nitrobenzene	B23-Ap0012933	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Pentachlorobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachloronitrobenzene	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorophenol	M23-Ap0018969	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Phenanthrene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenol	M23-Ap0018969	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Pronamide	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pyrene	M23-Ap0018969	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trifluralin	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Haloethers				Result 1	Result 2	RPD			
4-Bromophenyl phenyl ether	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorophenyl phenyl ether	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroethoxy)methane	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	B23-Ap0012933	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Organic Carbon	M23-Ap0025077	NCP	mg/L	8.1	8.2	<1	30%	Pass	
Sulphur	S23-Ap0039080	NCP	mg/L	42	37	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony	M23-Ap0025649	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	M23-Ap0025649	NCP	mg/L	0.072	0.069	5.0	30%	Pass	
Beryllium	M23-Ap0025649	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Boron	M23-Ap0025649	NCP	mg/L	< 2	< 2	<1	30%	Pass	
Cadmium	M23-Ap0025649	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M23-Ap0025649	NCP	mg/L	0.031	0.029	5.0	30%	Pass	
Cobalt	M23-Ap0025649	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Copper	M23-Ap0025649	NCP	mg/L	0.026	0.038	37	30%	Fail	Q15
Lead	M23-Ap0025649	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Manganese	M23-Ap0025649	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Mercury	M23-Ap0025649	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Molybdenum	M23-Ap0025649	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nickel	M23-Ap0025649	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Selenium	M23-Ap0025649	NCP	mg/L	< 1	< 1	<1	30%	Pass	
Tin	M23-Ap0025649	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Vanadium	M23-Ap0025649	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Zinc	M23-Ap0025649	NCP	mg/L	0.10	0.12	16	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-Ap0010752	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Ap0010752	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M23-Ap0010752	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Ap0010752	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-Ap0018361	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-Ap0012324	NCP	ug/L	0.16	0.17	8.1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-Ap0012324	NCP	ug/L	0.02	0.03	14	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Ap0012324	NCP	ug/L	0.02	0.03	30	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Ap0012324	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Ap0012324	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Ap0012324	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-Ap0012324	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Ap0012324	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Ap0012324	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Ap0012324	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Ap0012324	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Ap0012324	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Ap0012324	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-Ap0012324	NCP	ug/L	0.08	0.08	2.4	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-Ap0012324	NCP	ug/L	< 0.01	0.01	26	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Ap0012324	NCP	ug/L	0.03	0.03	2.8	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-Ap0012324	NCP	ug/L	0.12	0.12	2.3	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-Ap0012353	NCP	ug/L	5.4	6.6	19	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Ap0012324	NCP	ug/L	0.06	0.07	13	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-Ap0012353	NCP	ug/L	4.6	5.6	19	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Ap0012324	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Ap0018350	NCP	ug/L	0.02	0.02	4.3	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Ap0018361	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Ap0012324	NCP	ug/L	0.05	0.05	14	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Ap0012324	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ursula Long	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-PFAS
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Annexure D Water quality ESdat data summary to 10 May 2023

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	50	50	1	1	0.1	0.1	1	1	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			1.4	1.4			3.4	3.4	0.6	0.6	11	11	8	8
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											1.4	1.4									15	15
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<1	16	16	850	180	<1	<1	<0.1	<0.1	-	9	24	28
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	<1	5	1	5,100	230	2	<1	<0.01	<0.1	12	6	13	5
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<1	-	45	5,310	<50	-	<1	-	<0.1	-	66	-	54
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	<1	-	30	3,120	<50	-	<1	-	<0.1	-	8	-	38
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<1	-	12	13,100	<50	-	<1	-	<0.1	-	9	-	16
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	<1	-	4	23,700	<50	-	<1	-	<0.1	-	6	-	18
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	7	-	-	-	<1	-	<0.1	-	61	-	15	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	8	-	9
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<1	-	4	-	-	-	<1	-	<0.1	-	2	-	28
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<1	-	2	-	-	-	<1	-	<0.1	-	12	-	50
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<1	-	<1	-	-	-	1	-	<0.1	-	37	-	96
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<1	-	1	-	-	-	<1	-	<0.1	-	5	-	50
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	24	-	1	-	-	-	4	-	<0.1	-	18	-	81
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	19	-	50
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	20	-	54
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	3	-	9
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	2	-	<5
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	3	-	<5
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<1	-	<1	18,500	100	-	<1	-	<0.1	-	2	-	17
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<1	-	<1	12,400	<50	-	<1	-	<0.1	-	3	-	17
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<1	-	1	18,600	150	-	<1	-	<0.1	-	2	-	15
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<1	-	<1	14,600	320	-	<1	-	<0.1	-	2	-	12
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<1	-	<1	5,590	330	-	<1	-	<0.1	-	3	-	20
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<1	-	<1	3,410	330	-	<1	-	<0.1	-	3	-	21
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	317	-	-	-	157	-	<0.1	-	161	-	640	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	2	-	1	-	-	-	<1	-	<0.1	-	40	-	53
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<1	-	<1	-	-	-	<1	-	<0.1	-	26	-	66
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<1	-	<1	-	-	-	<1	-	<0.1	-	23	-	72
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<1	-	<1	-	-	-	<1	-	<0.1	-	30	-	88
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<1	-	<1	6,160	2,240	-	<1	-	<0.1	-	16	-	65
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<1	-	<1	19,400	730	-	<1	-	<0.1	-	15	-	100
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<1	-	<1	5,560	7,520	-	<1	-	<0.1	-	16	-	54
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<1	-	<1	6,770	1,270	-	<1	-	<0.1	-	12	-	49
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<1	-	4	4,390	100	-	<1	-	<0.1	-	10	-	160
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<1	-	<1	9,320	1,250	-	<1	-	<0.1	-	11	-	50
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<1	-	4	4,740	430	-	<1	-	<0.1	-	10	-	41
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<1	-	2	3,170	430	-	<1	-	<0.1	-	12	-	63
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	<1	-	<1	5,830	1,060	-	<1	-	<0.1	-	8	-	32
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<10	-	22	2,920	1,310	-	17	-	<0.1	-	182	-	267
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<10	-	24	9,680	1,180	-	16	-	<0.1	-	180	-	352
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<10	-	26	7,070	840	-	20	-	<0.1	-	222	-	542
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<1	-	2	190	<50	-	<1	-	<0.1	-	<1	-	9
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	<1	-	3	1,020	640	-	<1	-	<0.1	-	4	-	6
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<1	-	4	10,800	<50	-	<1	-	<0.1	-	3	-	18
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	2	-	<1	1,970	1,310	-	7	-	<0.1	-	498	-	1,150
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	2	-	34	1,590	1,010	-	16	-	<0.1	-	548	-	1,430
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	<10	-	81	1,260	<100	-	21	-	<0.1	-	523	-	1,750
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<1	-	28	-	-	-	7	-	<0.1	-	46	-	172
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<1	-	15	-	-	-	7	-	<0.1	-	45	-	164
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<1	-	29	-	210	-	7	-	<0.1	-	44	-	160
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<1	-	13	330	110	-	7	-	<0.1	-	39	-	152
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	<1	-	12	510	<50	-	6	-	<0.1	-	43	-	135
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	<1	-	12	130	<50	-	6	-	<0.1	-	33	-	118
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<1	-	2	1,250	<50	-	<1	-	<0.1	-	<1	-	34
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<1	-	<1	7,860	100	-	<1	-	<0.1	-	7	-	44

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	50	50	1	1	0.1	0.1	1	1	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			1.4	1.4			3.4	3.4	0.6	0.6	11	11	8	8
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											1.4	1.4									15	15
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	<1	-	2	7,400	<50	-	<1	-	<0.1	-	3	-	27
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<1	-	<1	41,100	6,480	-	<1	-	<0.1	-	44	-	68
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<1	-	<1	167,000	12,800	-	<1	-	0.5	-	286	-	140
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<1	-	1	559,000	13,800	-	<1	-	<0.1	-	33	-	26
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<1	-	<1	134,000	21,100	-	<1	-	<0.1	-	36	-	12
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<1	-	<1	46,700	12,700	-	<1	-	<0.1	-	50	-	101
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<1	-	<1	162,000	23,000	-	<1	-	<0.1	-	80	-	32
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<1	-	<1	1,440,000	22,800	-	<1	-	<0.1	-	41	-	24
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<1	-	<1	37,900	2,260	-	<1	-	<0.1	-	34	-	66
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<1	-	<1	177,000	700	-	<1	-	<0.1	-	40	-	26
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<1	-	1	200,000	5,580	-	<1	-	<0.1	-	34	-	27
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	3	-	7	-	-	-	8	-	<0.1	-	65	-	173
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	2	-	7	-	-	-	10	-	<0.1	-	69	-	186
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<1	-	11	-	-	-	<1	-	<0.1	-	57	-	188
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<1	-	8	-	-	-	<1	-	<0.1	-	68	-	182
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<1	-	28	-	-	-	3	-	<0.1	-	73	-	236
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	12	-	<1	-	<50	-	<1	-	<0.1	-	<1	-	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<1	-	1	10,000	4,880	-	1	-	<0.1	-	69	-	85
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<1	-	6	1,520	710	-	<1	-	<0.1	-	25	-	61
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<1	-	1	14,100	2,200	-	<1	-	<0.1	-	85	-	123
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	<1	-	2	7,130	1,650	-	4	-	<0.1	-	71	-	65
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	<1	-	3	56,600	<50	-	<1	-	<0.1	-	4	-	8
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	<1	-	4	108,000	2,390	-	<1	-	<0.1	-	70	-	54
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<10	-	<10	22,400	1,490	-	<10	-	<0.1	-	65	-	<50
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<1	-	<1	12,200	60	-	<1	-	<0.1	-	10	-	60
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<10	-	<10	8,460	3,600	-	<10	-	<0.1	-	75	-	<50
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	42	-	48
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	7	-	5	-	-	-	<1	-	<0.1	-	40	-	51
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<1	-	<1	-	<50	-	<1	-	<0.1	-	36	-	33
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<1	-	2	-	800	-	<1	-	<0.1	-	48	-	80
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<1	-	2	62,500	5,440	-	<1	-	<0.1	-	47	-	53
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<1	-	<1	4,990	5,190	-	<1	-	<0.1	-	46	-	53
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	1	-	8	6,480	1,400	-	<1	-	0.1	-	29	-	84
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	<1	-	<1	705,000	1,650	-	<1	-	<0.1	-	52	-	64
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<10	-	<10	-	-	-	<10	-	<0.1	-	80	-	202
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<10	-	<10	-	-	-	<10	-	<0.1	-	76	-	214
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<1	-	<1	-	7,640	-	<1	-	<0.1	-	90	-	162
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<1	-	<1	-	8,170	-	<1	-	<0.1	-	90	-	184
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<1	-	<1	-	7,780	-	<1	-	<0.1	-	75	-	115
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<1	-	1	-	7,720	-	<1	-	<0.1	-	88	-	148
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<1	-	2	-	4,240	-	<1	-	<0.1	-	82	-	165
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<1	-	5	-	6,320	-	1	-	0.1	-	87	-	167
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	2	-	<5
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	2	-	<5
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<1	-	<1	-	70	-	<1	-	<0.1	-	2	-	<5
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<1	-	<1	-	770	-	<1	-	<0.1	-	4	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<1	-	<1	-	<50	-	<1	-	<0.1	-	3	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<1	-	<1	-	1,910	-	<1	-	<0.1	-	1	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<1	-	<1	-	120	-	<1	-	<0.1	-	2	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<1	-	<1	-	4,400	-	<1	-	<0.1	-	14	-	10
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<1	-	3	-	450	-	<1	-	<0.1	-	11	-	53
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<1	-	<1	-	3,430	-	<1	-	<0.1	-	18	-	245
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<1	-	<1	26,400	7,510	-	<1	-	<0.1	-	15	-	10
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<1	-	<1	39,600	4,960	-	<1	-	<0.1	-	13	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<1	-	<1	45,700	5,470	-	<1	-	<0.1	-	16	-	12
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<1	-	<1	179,000	640	-	<1	-	<0.1	-	12	-	14
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<1	-	<1	19,500	680	-	<1	-	<0.1	-	14	-	15
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<1	-	<1	16,000	680	-	<1	-	<0.1	-	13	-	15
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	35	-	<5
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	32	-	6
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	2	-	<1	-	860	-	<1	-	<0.1	-	24	-	<5
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<1	<1	<1	2,410	310	<1	<1	<0.1	<0.1	23	11	16	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	50	50	1	1	0.1	0.1	1	1	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			1.4	1.4			3.4	3.4	0.6	0.6	11	11	8	8
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											1.4	1.4									15	15
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<1	-	<1	16,300	160	-	<1	-	<0.1	-	11	-	<5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<1	-	1	11,300	6,950	-	<1	-	<0.1	-	18	-	20
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	<1	-	<1	31,200	1,220	-	<1	-	<0.1	-	21	-	23
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<1	-	<1	540	130	-	<1	-	<0.1	-	5	-	6
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<10	-	<10	6,850	<100	-	<10	-	<0.1	-	<10	-	<50
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	<1	-	1	2,840	<50	-	<1	-	<0.1	-	<1	-	<5
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<1	-	<1	32,200	<50	-	<1	-	<0.1	-	<1	-	<5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<1	-	<1	9,090	5,730	-	<1	-	<0.1	-	23	-	38
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	2	-	<1	77,900	220	-	<1	-	<0.1	-	26	-	41
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<1	-	11	-	-	-	4	-	<0.1	-	72	-	169
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<1	-	11	62,300	1,340	-	4	-	<0.1	-	62	-	147
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	<1	-	12	4,250	600	-	6	-	<0.1	-	65	-	182
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<1	-	2	25,000	20,100	-	<1	-	<0.1	-	66	-	154
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	<1	-	2	25,800	23,700	-	<1	-	<0.1	-	67	-	187
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	<10	-	<10	-	-	-	<10	-	<0.1	-	279	-	416
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<10	-	<10	-	-	-	<10	-	<0.1	-	334	-	559
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<10	-	<10	2,480	<100	-	<10	-	<0.1	-	334	-	676
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<10	-	<10	5,940	<100	-	<10	-	<0.1	-	392	-	833
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<1	-	<1	1,760	1,210	-	<1	-	<0.1	-	2	-	<5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<1	-	<1	12,900	1,670	-	<1	-	<0.1	-	5	-	8
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	2	-	10	-	-	-	<1	-	<0.1	-	39	-	72
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	2	-	2	-	-	-	<1	-	<0.1	-	29	-	20
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	4	-	<1	-	1,120	-	<1	-	<0.1	-	58	-	6
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	4	-	4	-	-	-	<1	-	<0.1	-	27	-	68
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	4	-	<1	-	-	-	<1	-	<0.1	-	29	-	10
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	2	-	<1	-	3,130	-	<1	-	<0.1	-	29	-	<5
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	58	-	4	<50	<50	-	<1	-	<0.1	-	3	-	<5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	40	-	3	2,450	<50	-	<1	-	<0.1	-	3	-	<5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<1	-	2	-	80	-	<1	-	<0.1	-	9	-	26
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	<1	<7	<1	1,900	1,250	<2	<1	<0.1	<0.1	5	6	<25	<5
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	<1	14	2	2,130	<50	<2	<1	<0.1	<0.1	24	22	74	55
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	<1	2	1	19,800	18,500	2	1	-	-	30	29	13	11
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	<1	<5	<1	1,780	1,530	<1	<1	<0.1	<0.1	10	8	12	6
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	<1	19	14	340	<50	1	1	<0.1	<0.1	40	34	129	112
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	<1	<1	<1	6,000	4,340	<2	<1	<0.1	<0.1	6	6	<9	<5
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<1	-	<1	-	9,370	-	<1	-	<0.1	-	7	-	<5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	<1	<1	<1	9,370	9,370	<1	<1	-	-	7	7	<5	<5
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	<1	<1	<1	4,020	4,780	<1	<1	<0.1	-	6	6	<19	<5
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	<1	<1	<1	6,000	4,340	<2	<1	<0.1	<0.1	6	6	<9	<5
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	<1	<4	<1	23,100	21,000	<1	<1	<0.1	<0.1	7	6	12	8
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	<1	5	<1	16,800	13,400	2	<1	<0.1	<0.1	9	6	19	8
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<1	-	<1	-	<50	-	<1	-	<0.1	-	1	-	<5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	<1	<1	<1	<50	<50	<1	<1	-	-	1	1	<5	<5
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	<1	<1	<1	290	290	<1	<1	-	-	26	26	11	11
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<1	-	<1	-	290	-	<1	-	<0.1	-	26	-	11
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	<1	<5	<1	2,490	2,150	<1	<1	<0.1	<0.1	25	24	<7	<5
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	<1	<1	<1	1,930	2,290	<2	<1	<0.1	<0.1	15	14	<5	<5
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	<1	6	3	960	630	<1	<1	<0.1	<0.1	8	7	15	8
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	1	12	3	4,470	1,300	5	<1	<0.1	<0.1	12	6	40	9
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<1	<1	<1	<50	<50	<1	<1	-	0.1	7	7	<5	<5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	<1	63	<1	18,100	2,740	22	<1	<0.1	<0.1	40	15	113	10
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	<1	3	<1	5,560	3,630	2	<1	<0.1	<0.1	17	10	21	<5
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	<1	<1	<1	2,660	2,000	<1	<1	<0.1	<0.1	12	1	19	<5
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	<1	8	<1	1,920	620	1	<1	<0.1	<0.1	25	2	22	<5
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	<1	<2	<1	19,800	18,500	<2	<1	<0.1	<0.1	30	29	13	11
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	<1	<1	<1	24,900	25,000	<1	<1	<0.1	<0.1	30	25	24	22

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	50	50	1	1	0.1	0.1	1	1	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			1.4	1.4			3.4	3.4	0.6	0.6	11	11	8	8
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											1.4	1.4									15	15
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	<1	<1	<1	16,300	16,100	1	<1	<0.1	<0.1	49	42	78	71
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	<1	<1	<1	16,100	14,700	2	1	<0.1	<0.1	59	52	111	92
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	<1	4	<1	23,900	19,300	2	<1	<0.1	<0.1	59	56	90	78
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	<1	<1	<1	17,800	15,600	<1	<1	<0.1	<0.1	46	39	82	58
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	7	1	5,950	4,030	2	-	-	-	9	9	33	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	<1	11	<1	8,680	4,160	4	<1	<0.1	<0.1	13	7	52	5
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	<1	5	1	4,440	2,850	2	<1	<0.1	<0.1	7	4	17	<5
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	<1	<1	<1	3,790	2,990	<1	<1	<0.1	<0.1	5	4	8	<5
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	<1	3	<1	1,940	1,840	<1	<1	<0.1	<0.1	3	3	11	<5
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	<1	1	<1	5,240	4,820	<1	<1	<0.1	<0.1	3	6	23	8
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	<1	2	<1	4,860	3,530	1	<1	<0.1	<0.1	5	3	51	10
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	<1	4	<1	5,070	3,820	2	<1	<0.1	<0.1	5	3	65	6
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	<1	<1	<1	3,360	2,820	<1	<1	<0.1	<0.1	17	12	17	15
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	<1	4	<1	4,880	770	2	<1	<0.1	<0.1	4	4	15	<5
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	<1	2	<1	3,220	850	1	<1	<0.1	<0.1	2	1	13	<5
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	<1	1	<1	2,500	1,020	2	<1	<0.1	<0.1	<1	1	9	<5
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	<1	<1	<1	5,750	5,700	<1	<1	<0.1	<0.1	1	<1	22	16
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	<1	2	2	6,400	4,560	1	<1	<0.1	<0.1	2	<1	55	18
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	<1	<1	<1	5,640	3,970	<1	<1	<0.1	<0.1	2	<1	26	16
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	4,970	3,360	-	-	-	-	-	4	16	27
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<1	-	2	3,310	540	-	<1	-	<0.1	-	8	-	6
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<1	-	<1	2,420	310	-	<1	-	<0.1	-	8	-	<5
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	<1	<1	<1	170	<50	<1	<1	<0.1	<0.1	2	2	<5	<5
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	<1	<1	<1	140	130	<1	<1	<0.1	<0.1	2	2	<5	<5
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	<1	<1	<1	700	220	<1	<1	<0.1	<0.1	2	2	<5	7
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	<1	<1	1	190	50	<1	<1	<0.1	<0.1	<1	1	<5	<5
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	<1	3	<1	2,180	1,590	<1	<1	<0.1	<0.1	2	2	13	<5
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	<1	2	1	3,420	1,460	2	<1	<0.1	<0.1	2	<1	20	6
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	<1	2	<1	4,740	2,540	2	<1	<0.1	<0.1	2	<1	21	<5
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	<1	6	<1	5,200	2,800	3	<1	<0.1	<0.1	2	<1	36	8
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	2	6	4	420	<50	<1	<1	<0.1	<0.1	1	4	<5	<5
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	<1	4	2	870	<50	<1	<1	<0.1	<0.1	3	2	<5	<5
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	<1	2	6	590	<50	<1	<1	<0.1	<0.1	6	5	7	5
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	<1	21	14	1,310	60	3	<1	<0.1	<0.1	5	3	32	<5
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	<1	1	1	4,400	2,550	<1	<1	<0.1	<0.1	4	3	53	24
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	<1	<1	<1	2,500	1,600	<1	<1	<0.1	<0.1	2	<1	20	8
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	<1	2	<1	3,090	2,860	<1	<1	<0.1	<0.1	2	2	20	13
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	<1	<1	<1	2,480	2,130	<1	<1	<0.1	<0.1	<1	<1	8	5
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<1	52	10	2,540	1,930	<1	<1	<0.1	<0.1	76	84	29	7
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	<1	56	1	2,120	1,590	<1	<1	<0.1	<0.1	67	2	242	<5
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	<1	57	<1	1,580	400	<1	<1	<0.1	<0.1	45	<1	88	16
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	<1	190	<1	2,420	550	<1	<1	<0.1	<0.1	95	3	197	<5
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	3	<1	2	3,570	5,480	<1	<1	<0.1	<0.1	12	40	<5	363
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	<1	397	<1	6,040	3,700	<1	<1	<0.1	<0.1	99	2	285	<5
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	<1	5	<1	113,000	115,000	2	<1	<0.1	<0.1	180	166	138	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	<1	7	4	106,000	104,000	<1	<1	<0.1	<0.1	160	142	247	66
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	<1	<1	<1	105,000	88,700	<1	<1	<0.1	<0.1	161	144	187	154
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	<1	2	<1	80,000	66,800	6	1	<0.1	<0.1	213	213	336	320
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	5	16	11	62,100	85,000	25	21	<0.1	<0.1	235	270	523	606
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	1	12	11	22,800	18,300	14	13	<0.1	<0.1	211	189	394	369
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	<1	34	24	28,400	25,600	16	14	<0.1	<0.1	249	209	508	416
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	<1	17	16	33,400	30,800	13	13	<0.1	<0.1	232	238	474	466
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	2	1	<1	97,000	98,900	4	2	<0.1	<0.1	293	278	486	443
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	<1	4	<1	3,250	2,110	1	<1	<0.1	<0.1	2	2	9	<5
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	<1	2	1	940	640	<1	<1	<0.1	<0.1	1	1	<5	<5
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	<1	3	2	690	150	<1	<1	<0.1	<0.1	3	3	16	10
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	<1	4	7	1,980	120	<1	<1	<0.1	<0.1	2	2	9	<5
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	14	18	<1	360	<50	2	<1	<0.1	<0.1	10	13	22	<5
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	<1	9	<1	340	<50	<1	<1	<0.1	<0.1	4	4	13	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	50	50	1	1	0.1	0.1	1	1	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			1.4	1.4			3.4	3.4	0.6	0.6	11	11	8	8
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											1.4	1.4									15	15
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	5	-	23	1,530	<50	-	<1	-	<0.1	-	4	-	22
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	7	-	23	1,320	<50	-	<1	-	<0.1	-	5	-	33
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	6	-	17	1,370	200	-	<1	-	<0.1	-	5	-	52
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	<1	<1	<1	2,310	2,260	<1	<1	<0.1	<0.1	3	3	6	<5
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	<1	<1	<1	1,020	800	<1	<1	<0.1	<0.1	4	2	5	<5
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	<1	<1	<1	1,050	930	<1	<1	<0.1	<0.1	6	3	7	<5
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	<1	<1	2	1,400	1,100	<1	<1	<0.1	<0.1	9	3	10	<5
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	<1	4	<1	2,800	2,100	1	<1	<0.1	<0.1	5	3	45	<5
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	<1	10	4	410	<50	<1	<1	<0.1	<0.1	4	3	12	<5
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	2	3	<1	1,420	5,360	<1	<1	<0.1	<0.1	3	8	23	<5
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	<1	26	<1	22,300	100	63	<1	<0.1	<0.1	15	2	188	<5
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<1	7	<1	2,300	590	2	<1	<0.1	<0.1	18	17	33	21
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	9	-	1,500	-	2.2	-	<0.01	-	55	-	42	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	42	-	44
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<1	2	2	4,800	4,100	3	2	<0.1	<0.1	2	3	9	<5
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.01	-	1	-	<5	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	<1	-	4,600	-	<1	-	<0.01	-	1	-	<5	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<1	-	-	-	-	-	-	18	<0.1	270	240	300	270
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<1	-	-	-	-	-	<1	<0.1	<0.1	120	100	54	41
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<1	-	-	-	-	4	-	-	<0.1	140	130	220	180
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<1	-	<1	29,600	30,900	-	<1	-	<0.1	-	107	-	31
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	<1	-	<1	59,600	23,200	-	<1	-	<0.1	-	91	-	43
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<1	14	12	460	300	2	2	<0.01	<0.1	140	120	190	150
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<1	-	-	460	300	-	-	<0.01	<0.1	140	120	190	150
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	2	8	22	720	150	2	4	<0.1	<0.1	19	20	16	25
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	2.5	-	400	-	1.3	-	<0.01	-	27	-	7.8	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<1	-	7	-	-	-	<1	-	<0.1	-	50	-	9
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	<1	-	2	640	<50	-	<1	-	<0.1	-	46	-	29
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	12	-	7,000	-	4.7	-	<0.01	-	1,000	-	62	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	16	-	9
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	1	-	225	-	14,200	-	9	-	<0.1	-	199	-	217
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	4	-	3,080	-	-	-	45	-	<0.1	-	139	-	235
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<10	-	3,240	120,000	13,900	-	45	-	<0.1	-	107	-	207
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	2	-	1,860	256,000	15,600	-	42	-	<0.1	-	109	-	207
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	1	-	752	28,600	15,400	-	36	-	<0.1	-	82	-	154
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	2	-	517	-	-	-	21	-	<0.1	-	137	-	214
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<1	-	2	-	-	-	<1	-	<0.1	-	3	-	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	3	-	2	-	-	-	<1	-	<0.1	-	3	-	<5
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	<1	9	3	12,800	10,600	2	<1	<0.1	<0.1	168	163	274	279
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	<1	9	6	2,290	620	1	<1	<0.1	<0.1	128	128	281	271
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	<1	14	8	16,000	13,200	4	<1	<0.1	<0.1	195	175	345	322
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	<1	30	1	22,400	17,500	4	<1	<0.1	<0.1	208	223	487	274
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	<1	11	1	3,070	360	4	<1	<0.1	<0.1	9	5	49	<5
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	<1	7	1	1,600	<50	2	<1	<0.1	<0.1	9	6	25	7
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	<1	1	<1	400	270	<1	<1	<0.1	<0.1	5	6	5	<5
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	<1	6	<1	1,990	880	2	<1	<0.1	<0.1	7	4	28	<5
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	<1	3	<1	580	120	<1	<1	<0.1	<0.1	4	4	17	<5
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<1	-	<1	13,000	1,500	-	<1	-	<0.1	-	3	-	<5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<1	19	<1	12,000	1,770	10	<1	<0.1	<0.1	27	4	79	<5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	2	-	2	18,600	<50	-	<1	-	<0.1	-	11	-	20
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	2	-	<1	115,000	880	-	<1	-	<0.1	-	5	-	7
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<10	-	<10	8,130	2,870	-	<10	-	<0.1	-	<10	-	<50

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	50	50	1	1	0.1	0.1	1	1	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			1.4	1.4			3.4	3.4	0.6	0.6	11	11	8	8
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											1.4	1.4									15	15
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	<1	7	1	1,320	70	2	<1	<0.1	<0.1	18	7	49	9
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	1	5	<1	760	320	<1	<1	<0.1	<0.1	16	15	38	<5
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	<1	3	<1	660	310	1	<1	<0.1	<0.1	14	10	26	<5
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	<1	5	9	1,210	170	2	<1	<0.1	<0.1	31	39	130	156
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<1	<1	<1	12,800	9,780	3	<1	<0.1	<0.1	31	31	14	<5
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	1	<1	<1	5,190	4,800	<1	<1	<0.1	<0.1	11	10	15	10
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	2	7	4	4,700	120	4	5	<0.1	<0.1	90	79	62	50
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	2	-	930	-	<1	-	<0.01	-	46	-	28	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<1	-	-	110	<50	<1	<1	<0.1	<0.1	45	45	34	37
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<1	16	14	340	70	2	<1	<0.1	<0.1	426	414	492	482
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	<1	3	2	3,560	2,450	<1	<1	<0.1	<0.1	566	533	117	<5
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<1	-	7	12,600	70	-	1	-	<0.1	-	534	-	826
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<1	<1	9	2,320	<50	<1	1	<0.1	<0.1	573	409	826	844
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<1	-	<1	-	-	-	<1	<0.1	<0.1	-	-	12	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<1	-	1	-	980	<1	<1	<0.1	<0.1	26	22	56	50
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<1	-	<1	430	<50	-	<1	-	0.1	-	22	-	191
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	<1	-	<1	1,270	<50	-	<1	-	0.1	-	29	-	134
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	<1	-	3	8,840	3,740	-	<1	-	<0.1	-	20	-	91
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	<1	-	7	42,700	10,200	-	3	-	<0.1	-	38	-	112
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	<1	-	2	11,000	9,730	-	4	-	<0.1	-	32	-	119

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Metals																			
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Molybdenum	Molybdenum (filtered)	Selenium	Selenium (filtered)	Chromium (hexavalent)	Chromium (hexavalent) (filtered)	Aluminium	Aluminium (filtered)	Arsenic III	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	10					
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				11	11	1	1	55	55	24				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672														1	1	80	80					
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<5	<5	<1	<1	-	-	200	<50	-	30	30	<1	<1
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	<5	<5	<1	<1	-	-	1,900	<50	-	60	30	<1	<1
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	900	<10	-	-	-	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	1,020	<10	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	9,800	<10	-	-	-	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	<10	10,700	<10	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	5,280	<10	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	2,180	<10	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	9,660	<10	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	3,000	<10	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	-	-	-	-	910	<10	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	-	-	-	-	930	<10	-	-	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	-	-	-	<10	2,120	40	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	-	-	-	<100	10,200	110	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	-	-	-	<10	720	<10	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	830	20	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	1,340	240	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	1,540	30	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	2,960	50	-	-	-	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	1,980	40	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	3,760	60	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	-	-	-	<10	7,100	6,550	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	-	-	-	-	13,500	7,540	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	-	-	-	-	10,900	7,040	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	140	40	-	-	-	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	360	<10	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	-	-	-	-	2,730	20	-	-	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	-	-	-	<10	10,200	3,690	-	-	-	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	10,900	6,380	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	<10	21,300	14,700	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	-	-	-	<10	2,030	1,830	-	-	-	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	2,220	1,550	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	1,790	1,520	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	-	-	-	<10	790	<10	-	-	-	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	5,900	30	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Molybdenum	Molybdenum (filtered)	Selenium	Selenium (filtered)	Chromium (hexavalent)	Chromium (hexavalent) (filtered)	Aluminium	Aluminium (filtered)	Arsenic III	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	10					
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				11	11	1	1	55	55	24				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672														1	1	80	80					
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	<10	6,380	<10	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	-	-	-	-	13,500	<10	-	-	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	-	-	-	-	61,900	<10	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	-	-	-	-	180,000	60	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	-	-	-	-	39,100	20	-	-	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	-	-	-	-	12,400	<10	-	-	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	-	-	-	-	41,200	70	-	-	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	-	-	-	-	432,000	<10	-	-	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	-	-	-	-	18,200	<10	-	-	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	-	-	-	-	86,100	<10	-	-	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	-	-	-	-	73,900	30	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	-	-	-	<10	3,530	30	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	1,610	60	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	-	-	-	<10	9,660	<10	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	3,460	450	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	43,100	<10	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	77,000	<10	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	-	-	-	-	17,500	540	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	-	-	-	-	9,500	<10	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	-	-	-	-	580	<100	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	24,000	20	-	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	170	170	-	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	-	-	-	-	320	10	-	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	287,000	<10	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	-	-	-	<10	9,080	80	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	-	-	-	<10	5,260	<10	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	-	-	-	<10	4,600	40	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	-	-	-	-	19,300	<10	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	-	-	-	-	3,060	<10	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	-	-	-	-	3,070	<10	-	-	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	-	-	-	400	<10	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Molybdenum	Molybdenum (filtered)	Selenium	Selenium (filtered)	Chromium (hexavalent)	Chromium (hexavalent) (filtered)	Aluminium	Aluminium (filtered)	Arsenic III	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	10					
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				11	11	1	1	55	55	24				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672														1	1	80	80					
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	-	-	-	3,510	40	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	-	-	-	<10	2,740	<10	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	<10	9,540	<10	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	-	-	-	<10	160	10	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	-	-	-	-	4,510	<100	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	2,230	<10	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	-	-	-	-	21,200	<10	-	-	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	-	-	-	<10	1,790	10	-	-	-	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	23,900	30	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	-	-	-	<10	23,400	1,580	-	-	-	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	3,380	1,900	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	-	-	-	<10	1,260	1,010	-	-	-	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	2,190	1,020	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	-	-	-	<10	2,420	270	-	-	-	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	-	-	-	<10	3,830	510	-	-	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	-	-	-	<10	360	<10	-	-	-	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	-	-	-	-	3,670	<10	-	-	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	-	-	-	<10	<10	-	-	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	-	-	-	1,070	<10	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	-	<10	-	-	-	10	-	-	-	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	2	2	<10	<10	-	-	<560	<10	-	1,290	122	<1	<1
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	2	1	<10	<10	-	-	<830	<10	-	449	152	<1	<1
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	9	7	<10	<10	-	-	3,060	20	-	100	99	3	2
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	2	1	<10	<10	-	-	<150	<10	-	212	115	<1	<1
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	<1	<1	<10	<10	-	-	610	80	-	357	40	2	2
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	<830	<10	-	2,160	2,180	<1	<1
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	-	<10	-	<10	-	20	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	<10	<10	-	-	20	20	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	<2,190	<10	-	2,180	2,150	<1	<1
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	<830	<10	-	2,160	2,180	<1	<1
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	<950	<10	-	3,210	3,100	<1	<1
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	<1	<1	<10	<10	-	-	2,170	10	-	1,070	1,000	<1	<1
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	<10	-	-	-	<10	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	<10	<10	-	-	<10	<10	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	<10	<10	-	-	<10	<10	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	-	<10	-	-	-	<10	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	3	2	<10	<10	-	-	<700	<10	-	202	198	<1	<1
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	2	2	<10	<10	-	-	<80	<10	-	115	123	<1	<1
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	3	3	<10	<10	-	-	510	120	-	50	38	<1	<1
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	2	1	<10	<10	-	-	2,930	280	-	69	44	<1	<1
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	10	10	-	-	240	240	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	2	1	<10	<10	-	-	12,800	<10	-	13,000	5,590	<1	<1
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	2	<1	<10	<10	-	-	720	<10	-	6,980	5,930	<1	<1
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	<1	<1	<10	<10	-	-	90	<10	-	7,890	8,730	<1	<1
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	6	<1	<10	<10	-	-	630	<10	-	8,770	9,060	<1	<1
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	9	7	<10	<10	-	-	3,060	20	-	100	99	3	2
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	5	4	<10	<10	-	-	80	20	-	72	68	2	2

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Molybdenum	Molybdenum (filtered)	Selenium	Selenium (filtered)	Chromium (hexavalent)	Chromium (hexavalent) (filtered)	Aluminium	Aluminium (filtered)	Arsenic III	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	10					
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				11	11	1	1	55	55	24				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672														1	1	80	80					
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	2	2	<10	<10	-	-	180	170	-	65	60	9	9
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	1	<1	<10	<10	-	-	550	180	-	67	58	12	10
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	1	<1	<10	<10	-	-	1,760	60	-	92	70	6	6
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	2	1	<10	<10	-	-	240	40	-	60	62	6	4
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	2	2	-	-	-	-	1,320	-	-	5,920	2,110	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	3	2	<10	<10	-	-	2,520	<10	-	6,080	1,920	<1	<1
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	2	1	<10	<10	-	-	840	<10	-	3,250	1,160	<1	<1
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	1	1	<10	<10	-	-	460	<10	-	2,300	1,600	<1	<1
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	330	10	-	5,040	4,570	<1	<1
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	2	1	<10	<10	-	-	380	<10	-	21,100	22,000	<1	<1
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	2	<1	<10	<10	-	-	580	<10	-	21,500	21,600	<1	<1
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	2	<1	<10	<10	-	-	1,220	<10	-	24,200	22,400	<1	<1
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	150	<10	-	28,300	23,300	<1	<1
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	<1	<1	<10	<10	-	-	1,550	<10	-	213	196	<1	<1
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	<1	<1	<10	<10	-	-	1,720	<10	-	140	139	<1	<1
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	670	<10	-	155	117	<1	<1
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	2	<1	<10	<10	-	-	210	<10	-	46,700	52,500	<1	<1
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	340	<10	-	45,500	41,400	<1	<1
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	1	<1	<10	<10	-	-	350	<10	-	55,000	43,700	<1	<1
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	2	-	-	-	-	130	-	-	67,000	37,400	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	2,660	40	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	980	70	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	20	<10	-	109	96	<1	<1
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	<10	<10	-	97	92	<1	<1
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	190	<10	-	78	70	<1	<1
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	30	<10	-	50	49	<1	<1
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	4	5	<10	<10	-	-	490	<10	-	7,080	12,200	<1	<1
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	1	<1	<10	<10	-	-	640	<10	-	13,200	12,000	<1	<1
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	4	3	<10	<10	-	-	1,210	<10	-	12,600	12,500	<1	<1
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	5	<1	<10	<10	-	-	1,360	<10	-	18,000	16,500	<1	<1
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	14	10	<10	<10	-	-	320	50	-	102	76	<1	<1
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	5	4	<10	<10	-	-	620	30	-	117	78	<1	<1
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	4	4	<10	<10	-	-	350	<10	-	172	154	<1	<1
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	12	10	<10	<10	-	-	870	10	-	88	66	<1	<1
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	3	<1	<10	<10	-	-	180	<10	-	60,100	47,200	<1	<1
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	2	<1	<10	<10	-	-	490	20	-	19,500	16,300	<1	<1
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	2	<1	<10	<10	-	-	120	30	-	24,500	8,870	<1	<1
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	10	<10	-	10,800	11,300	<1	<1
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	2	<1	<10	<10	-	-	70	<10	-	3,980	971	<1	<1
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	3	<1	<10	<10	-	-	80	<10	-	1,090	613	<1	<1
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	2	<1	<10	<10	-	-	90	40	-	1,720	965	<1	<1
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	6	<1	<10	<10	-	-	200	<10	-	3,020	972	<1	<1
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	<10	110	-	1,490	938	<1	<1
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	4	2	<10	<10	-	-	180	<10	-	3,330	2,130	<1	<1
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	4	<1	<10	<10	-	-	990	<10	-	449	158	3	2
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	2	1	<10	<10	-	-	1,310	110	-	250	118	4	3
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	1	<1	<10	<10	-	-	1,020	40	-	125	100	2	2
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	<1	<1	30	20	-	-	2,170	520	-	138	130	9	6
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	<1	<1	10	10	-	-	1,990	2,360	-	103	89	12	15
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	<1	<1	<10	10	-	-	1,580	1,510	-	88	82	8	7
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	<1	<1	10	10	-	-	2,330	2,000	-	93	80	12	10
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	<1	<1	10	30	-	-	1,870	1,740	-	110	84	11	10
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	<1	<1	30	20	-	-	1,330	1,300	-	76	73	10	10
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	<1	<1	<10	<10	-	-	870	<10	-	102	92	<1	<1
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	<1	<1	<10	<10	-	-	580	30	-	45	45	<1	<1
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	1	1	<10	<10	-	-	410	<10	-	134	123	<1	<1
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	1	<1	<10	<10	-	-	520	<10	-	82	51	<1	<1
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	234	187	<10	<10	-	-	220	20	-	2,840	2,780	<1	<1
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	124	94	<10	<10	-	-	80	<10	-	1,640	1,610	<1	<1

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Molybdenum	Molybdenum (filtered)	Selenium	Selenium (filtered)	Chromium (hexavalent)	Chromium (hexavalent) (filtered)	Aluminium	Aluminium (filtered)	Arsenic III	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	10					
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				11	11	1	1	55	55	24				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672														1	1	80	80					
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	580	<10	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	510	<10	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	-	-	360	<10	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	3	2	<10	<10	-	-	70	<10	-	178	106	<1	<1
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	10	4	<10	<10	-	-	40	<10	-	92	74	<1	<1
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	8	3	<10	<10	-	-	90	<10	-	125	76	<1	<1
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	6	3	<10	<10	-	-	50	<10	-	80	73	<1	<1
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	4	4	<10	<10	-	-	520	<10	-	286	113	<1	<1
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	8	7	<10	<10	-	-	550	20	-	29	13	<1	<1
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	7	<1	<10	<10	-	-	290	<10	-	60	106	<1	<1
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	5	6	20	<10	-	-	23,800	10	-	996	38	3	<1
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	<1	<1	-	-	1,600	50	-	190	180	<1	<1
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	18	13	<1	2	-	-	310	<50	-	250	180	<1	<1
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	<1
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<5	<5	-	-	-	-	-	-	-	50	50	3	3
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<5	<5	2	<1	-	-	-	<50	-	70	50	<1	<1
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<5	<5	-	-	-	-	-	-	-	70	60	2	2
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	-	-	-	<10	500	90	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	12,400	70	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<5	<5	<1	2	-	-	500	170	-	90	80	1	1
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<5	<5	<1	2	-	-	-	-	-	90	80	1	1
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	23	18	2	4	-	-	340	<50	-	390	350	<1	<1
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	<5	<5	<1	<1	-	-	240	<50	-	220	230	<1	<1
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	<1	-	20	-	<10	-	1,370	-	-	127	-	8
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	-	-	-	-	56,500	3,040	-	-	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	-	-	-	-	97,200	2,650	-	-	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	9,400	2,010	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	<1	<1	<10	<10	-	-	960	20	-	53	50	<1	<1
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	1	<1	<10	<10	-	-	1,500	<10	-	71	48	<1	<1
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	<1	<1	<10	<10	-	-	2,380	10	-	55	41	<1	<1
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	<1	<1	<10	10	-	-	2,940	90	-	74	45	1	1
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	7	4	<10	<10	-	-	2,180	<10	-	176	143	<1	<1
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	6	3	<10	<10	-	-	1,020	<10	-	156	152	<1	<1
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	2	2	<10	<10	-	-	130	<10	-	98	108	<1	<1
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	2	<1	<10	<10	-	-	1,290	10	-	94	74	<1	<1
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	<1	<1	<10	<10	-	-	440	<10	-	40	39	<1	<1
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	-	-	-	-	10,300	160	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	-	-	-	8,990	110	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	-	-	-	<10	1,340	<10	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	39,400	<10	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	-	-	-	-	990	<100	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Molybdenum	Molybdenum (filtered)	Selenium	Selenium (filtered)	Chromium (hexavalent)	Chromium (hexavalent) (filtered)	Aluminium	Aluminium (filtered)	Arsenic III	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	10					
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				11	11	1	1	55	55	24				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672														1	1	80	80					
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	4	5	<10	<10	-	-	1,640	<10	-	122	71	<1	<1
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	3	2	<10	<10	-	-	510	<10	-	119	101	<1	<1
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	2	<1	<10	<10	-	-	310	<10	-	111	103	<1	<1
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	2	2	<10	<10	-	-	530	30	-	70	59	<1	<1
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<1	<1	<10	<10	-	-	950	100	-	137	129	<1	<1
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<1	3	<10	<10	-	-	80	<10	-	55	54	<1	<1
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<5	<5	<1	3	<5	-	1,400	<50	-	170	130	<1	<1
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<5	<5	1	<1	-	-	60	<50	-	170	170	<1	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<1	<1	<10	<10	-	-	650	300	-	48	45	9	8
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	<1	<1	<10	<10	-	-	350	40	-	51	43	4	4
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	-	-	-	-	3,920	450	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	-	-	-	800	370	-	-	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<5	5	2	-	-	-	-	<50	-	70	60	<1	<1
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<5	<5	<1	<1	-	-	-	-	-	60	50	<1	<1
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	-	-	-	<10	190	10	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	<10	690	<10	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	630	70	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	8,400	270	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	890	670	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Boron	Boron (filtered)	Chromium (Trivalent) (filtered)	Cobalt	Cobalt (filtered)	Manganese	Manganese (filtered)	Strontium	Strontium (filtered)	Vanadium	Vanadium (filtered)	Benzene	Toluene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	1	1	1	1					1	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		370	370				1,900	1,900					950	180
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	100	90	-	3	3	320	290	14,000	14,000	<5	<5	<1	<1
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	7	3	780	400	17,000	15,000	<5	<5	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	<10	2	<1	148	76	-	-	-	-	<1	<2
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	<10	5	<1	394	111	-	-	-	-	<1	<2
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	<10	34	2	3,080	454	-	-	-	-	<1	<2
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	<10	41	<1	2,420	265	-	-	-	-	<1	<2
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	-	-	-	-	-	-	-	<1	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	<10	<10
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	<10	<10
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<10	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<10	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<10	<10
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	<10	11	3	151	84	-	-	-	-	<5	<5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	<10	4	3	121	83	-	-	-	-	<5	<5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	<10	9	2	128	76	-	-	-	-	<5	<5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	8	2	92	39	-	-	-	-	<5	<5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	-	5	<1	118	29	-	-	-	-	<5	<5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	-	4	<1	100	26	-	-	-	-	<5	<5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	<10	30	26	533	426	-	-	-	-	<1	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	<100	40	26	673	393	-	-	-	-	<1	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	<10	26	26	442	537	-	-	-	-	<1	<2
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	25	23	417	371	-	-	-	-	<1	<2
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	14	13	93	59	-	-	-	-	<1	<2
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	24	24	423	376	-	-	-	-	<1	<2
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	<10	36	25	393	260	-	-	-	-	<1	<2
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	34	30	380	301	-	-	-	-	<1	<2
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	<10	25	18	233	178	-	-	-	-	<1	<2
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	<10	362	326	5,640	4,820	-	-	-	-	<1	<2
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	-	360	331	5,300	4,590	-	-	-	-	<1	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	-	338	343	5,420	5,210	-	-	-	-	<1	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	<10	<1	<1	4	2	-	-	-	-	<1	<2
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	<1	<1	13	13	-	-	-	-	<1	<2
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	-	2	<1	67	<1	-	-	-	-	<1	<2
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	<10	824	795	4,960	4,670	-	-	-	-	<1	<2
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	868	894	5,570	5,490	-	-	-	-	<1	<2
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	<10	918	867	5,360	5,090	-	-	-	-	<1	<2
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	<10	104	109	20	23	-	-	-	-	<1	<2
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	114	107	44	17	-	-	-	-	<1	<2
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	<10	101	92	17	14	-	-	-	-	<1	<2
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	<10	2	1	188	124	-	-	-	-	<1	<2
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	12	5	1,010	412	-	-	-	-	<1	<2

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Boron	Boron (filtered)	Chromium (Trivalent) (filtered)	Cobalt	Cobalt (filtered)	Manganese	Manganese (filtered)	Strontium	Strontium (filtered)	Vanadium	Vanadium (filtered)	Benzene	Toluene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	1	1	1	1					1	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		370	370				1,900	1,900					950	180
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	<10	9	<1	1,220	134	-	-	-	-	<1	<2
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	-	118	110	2,160	1,640	-	-	-	-	<1	<2
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	-	210	98	3,800	1,520	-	-	-	-	<1	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	-	488	76	8,900	1,020	-	-	-	-	<1	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	-	166	106	3,490	1,570	-	-	-	-	<1	<2
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	-	168	169	3,930	3,520	-	-	-	-	<1	<2
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	-	227	136	5,630	2,340	-	-	-	-	<1	<2
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	-	1,020	147	29,400	2,440	-	-	-	-	<1	<2
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	-	123	116	2,570	2,410	-	-	-	-	<1	<2
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	-	201	105	4,550	2,740	-	-	-	-	<1	<2
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	-	212	119	4,990	2,660	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	-	-	-	-	8	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	<10	315	297	2,280	2,130	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	<10	31	96	200	574	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	<10	318	297	2,210	2,050	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	329	314	1,860	1,360	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	115	14	638	117	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	334	326	2,150	1,570	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	-	305	270	1,830	1,420	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	-	13	34	92	186	-	-	-	-	<1	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	-	322	282	2,010	1,780	-	-	-	-	<1	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	2	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	-	-	-	-	21,500	-	-	-	-	1	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	-	-	-	-	22,300	-	-	-	-	2	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	<10	352	334	20,600	21,800	-	-	-	-	<1	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	<10	340	336	22,100	22,000	-	-	-	-	2	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	-	297	154	18,500	8,690	-	-	-	-	<1	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	893	298	42,800	18,800	-	-	-	-	1	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	<50	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	-	-	-	-	2,650	-	-	-	-	<50	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	-	-	-	-	3,010	-	-	-	-	<50	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	-	-	-	-	3,450	-	-	-	-	<20	<20
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	-	-	-	-	3,060	-	-	-	-	<50	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	-	-	-	-	2,290	-	-	-	-	<50	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	-	-	-	-	2,490	-	-	-	-	<50	<50
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<10	<10
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<10	<10
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	-	-	-	-	735	-	-	-	-	<5	<5
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	-	-	-	-	722	-	-	-	-	<5	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	-	-	-	-	572	-	-	-	-	<1	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	-	-	-	-	663	-	-	-	-	<1	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	-	-	-	-	645	-	-	-	-	<5	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	<10	42	36	1,500	1,300	-	-	-	-	<1	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	<10	34	27	1,910	1,150	-	-	-	-	<1	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	<10	38	24	2,180	1,090	-	-	-	-	<1	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	-	85	26	4,960	1,010	-	-	-	-	<1	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	-	20	24	1,150	1,040	-	-	-	-	<1	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	-	21	25	1,250	1,050	-	-	-	-	<1	<2
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	2	<1	32	35	-	-	-	-	<1	<2

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Boron	Boron (filtered)	Chromium (Trivalent) (filtered)	Cobalt	Cobalt (filtered)	Manganese	Manganese (filtered)	Strontium	Strontium (filtered)	Vanadium	Vanadium (filtered)	Benzene	Toluene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	1	1	1	1					1	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		370	370				1,900	1,900					950	180
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	11	<1	94	26	-	-	-	-	<1	<2
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	<10	65	57	1,530	1,460	-	-	-	-	<1	<2
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	<10	102	52	2,000	1,190	-	-	-	-	<1	<2
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	<10	4	4	290	254	-	-	-	-	<1	<2
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	-	<10	<10	434	267	-	-	-	-	<1	<2
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	<10	7	<1	570	92	-	-	-	-	<1	<2
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	-	18	<1	537	13	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	<10	114	109	3,720	3,760	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	173	143	4,950	4,970	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	<10	150	132	291	125	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	138	128	111	74	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	<10	102	101	184	170	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	102	101	171	192	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	<10	610	565	9,620	8,800	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	<10	695	669	9,780	9,350	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	<10	6	5	575	526	-	-	-	-	<1	<2
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	-	19	8	721	648	-	-	-	-	<1	<2
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	<1	7
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	6
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	<1	<1	2	<1	-	-	-	-	<1	<2
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	2	<1	84	<1	-	-	-	-	<1	<2
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	-	-	20	-	1,530	-	-	-	-	<1	<2
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	<50	60	-	15	16	1,380	1,520	15,400	15,200	<10	<10	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	<50	50	-	42	37	2,870	2,850	13,700	15,200	<10	<10	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	50	50	-	104	102	1,850	1,870	1,790	1,820	<10	<10	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	<60	<50	-	30	26	1,800	1,760	16,800	16,800	<10	<10	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	<50	<50	-	50	45	867	751	3,110	2,670	<10	<10	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	<50	<50	-	98	94	2,950	2,840	850	822	<10	<10	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	-	-	149	-	6,410	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	149	149	6,410	6,410	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	<50	<50	-	102	102	2,940	3,340	848	827	<10	<10	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	<50	<50	-	98	94	2,950	2,840	850	822	<10	<10	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	<50	<50	-	122	114	7,840	7,920	1,420	1,410	<10	<10	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	<50	<50	-	91	84	7,470	6,730	723	761	<10	<10	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	-	<1	-	<1	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	<1	<1	<1	<1	-	-	-	-	<1	<2
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	28	28	596	596	-	-	-	-	<1	56
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	-	-	28	-	596	-	-	-	-	<1	51
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	<50	60	-	46	45	1,080	1,090	11,300	12,400	<10	<10	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	60	70	-	27	29	787	803	10,500	10,300	<10	<10	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	<50	<50	-	6	5	124	109	362	339	<10	<10	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	<50	<50	-	17	11	395	250	1,440	962	<10	<10	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	-	<1	<1	2	2	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	60	90	-	38	22	607	397	31,200	27,700	30	<10	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	70	70	-	17	15	474	393	28,400	28,500	<10	<10	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	50	50	-	4	1	416	421	29,600	29,200	<10	<10	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	70	50	-	4	<1	431	412	28,200	24,800	<10	<10	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	<50	<50	-	104	102	1,850	1,870	1,790	1,820	<10	<10	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	<50	<50	-	101	93	1,970	1,880	1,380	1,270	<10	<10	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Boron	Boron (filtered)	Chromium (Trivalent) (filtered)	Cobalt	Cobalt (filtered)	Manganese	Manganese (filtered)	Strontium	Strontium (filtered)	Vanadium	Vanadium (filtered)	Benzene	Toluene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	1	1	1	1					1	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		370	370				1,900	1,900					950	180
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	<50	<50	-	145	131	980	1,000	1,110	1,050	<10	<10	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	<50	<50	-	178	152	792	747	1,200	1,100	<10	<10	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	<50	<50	-	180	170	944	875	1,360	1,270	<10	<10	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	<50	<50	-	139	118	860	919	1,010	943	<10	<10	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	60	100	-	25	25	813	864	6,150	6,910	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	80	70	-	25	21	807	707	6,830	7,130	10	<10	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	60	60	-	18	13	680	617	5,440	4,880	<10	<10	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	70	50	-	15	15	614	633	4,820	4,610	<10	<10	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	<50	<50	-	7	8	352	397	3,020	3,750	<10	<10	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	70	80	-	6	6	300	278	8,790	9,240	<10	<10	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	90	<50	-	6	5	262	207	8,670	8,600	<10	<10	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	140	70	-	4	4	218	184	8,950	8,310	<10	<10	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	80	70	-	3	3	149	149	9,250	9,070	<10	<10	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	<50	<50	-	10	7	986	880	367	358	<10	<10	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	130	<50	-	5	4	453	532	345	343	<10	<10	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	<50	<50	-	4	3	315	328	231	254	<10	<10	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	<50	<50	-	10	11	456	452	18,400	20,500	<10	<10	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	50	50	-	7	6	399	372	17,800	17,300	<10	<10	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	<50	<50	-	6	4	260	218	21,500	16,800	<10	<10	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	70	-	-	5	4	216	194	22,800	15,300	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	<10	5	2	809	406	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	3	5	571	679	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	<50	<50	-	6	5	449	367	1,960	2,060	<10	<10	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	<50	<50	-	4	4	370	355	1,730	1,660	<10	<10	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	<50	<50	-	4	4	344	315	2,020	1,900	<10	<10	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	<50	<50	-	2	1	128	85	2,360	2,210	<10	<10	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	<50	50	-	2	2	411	223	10,500	11,200	<10	<10	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	<50	70	-	2	<1	419	384	12,700	12,200	<10	<10	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	50	60	-	4	3	207	199	12,500	12,400	<10	<10	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	60	<50	-	3	1	170	152	13,600	13,500	<10	<10	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	<50	<50	-	<1	<1	54	6	348	325	<10	<10	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	<50	<50	-	2	<1	326	170	169	178	<10	<10	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	<50	<50	-	9	4	1,710	1,430	235	240	<10	<10	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	90	70	-	6	2	334	209	420	402	<10	<10	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	100	100	-	4	1	921	862	36,400	36,100	<10	<10	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	150	170	-	1	<1	787	748	38,100	34,900	<10	<10	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	100	90	-	<1	<1	796	697	36,600	32,700	<10	<10	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	70	60	-	<1	<1	648	625	33,400	34,400	<10	<10	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	60	<50	-	4	3	800	851	25,500	20,800	<10	<10	<1	5
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	100	100	-	1	<1	1,060	1,000	23,400	24,800	<10	<10	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	100	130	-	1	<1	1,030	1,000	31,300	29,100	<10	<10	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	80	80	-	2	<1	1,110	980	27,000	28,600	<10	<10	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	70	120	-	2	3	994	999	26,500	24,900	<10	<10	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	70	80	-	2	<1	706	671	28,000	25,700	<10	<10	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	<50	<50	-	555	511	692	669	3,050	3,460	<10	<10	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	<50	<50	-	482	448	578	540	3,360	3,220	20	10	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	<50	<50	-	473	441	460	384	3,360	2,960	<10	<10	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	<50	<50	-	617	647	350	320	2,700	2,780	<10	<10	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	<50	<50	-	629	719	636	755	1,320	1,810	<10	<10	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	<50	<50	-	544	504	489	473	1,090	1,030	10	10	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	<50	<50	-	858	527	506	451	1,890	1,130	<10	<10	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	<50	<50	-	638	635	670	480	1,280	1,260	<10	<10	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	<50	<50	-	760	734	737	804	1,880	1,880	<10	<10	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	60	60	-	1	<1	591	572	13,800	12,600	<10	<10	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	<50	<50	-	<1	<1	198	213	3,790	3,760	<10	<10	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	<50	<50	-	4	4	547	455	3,720	3,350	<10	<10	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	50	<50	-	<1	<1	386	57	7,020	2,160	<10	<10	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	<50	<50	-	8	7	7	<1	12,900	12,900	<10	<10	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	<50	<50	-	<1	<1	4	<1	12,100	11,600	<10	<10	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Boron	Boron (filtered)	Chromium (Trivalent) (filtered)	Cobalt	Cobalt (filtered)	Manganese	Manganese (filtered)	Strontium	Strontium (filtered)	Vanadium	Vanadium (filtered)	Benzene	Toluene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	1	1	1	1					1	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		370	370				1,900	1,900					950	180
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	<10	7	2	84	31	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	6	5	79	60	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	15	7	126	77	-	-	-	-	<1	<2
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	100	70	-	6	5	470	467	29,100	23,800	<10	<10	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	220	220	-	5	4	1,040	938	19,300	20,300	<10	<10	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	160	210	-	5	3	1,020	1,100	18,100	17,000	<10	<10	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	150	140	-	5	4	1,120	1,010	18,300	18,800	<10	<10	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	140	120	-	4	1	1,570	1,490	22,700	23,000	<10	<10	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	<50	<50	-	<1	<1	6	2	95	81	<10	<10	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	<50	<50	-	4	34	127	215	309	1,100	<10	<10	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	80	<50	-	21	<1	222	41	803	230	10	<10	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	120	120	-	9	9	1,000	1,000	12,000	12,000	5	<5	<1	<1
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	18	-	1,400	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	70	100	-	5	3	670	570	4,900	4,400	15	15	<1	<1
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	1	-	720	-	-	-	-	-	<1	<1
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	1	-	720	-	-	-	-	-	<1	<1
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	70	-	-	-	-	-	-	-	-	-	<1	2
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<50	<50	-	940	870	43,000	43,000	1,900	2,000	<5	<5	<1	49
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<50	<50	-	230	220	6,900	7,300	4,700	5,000	<5	<5	<1	4
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<50	<50	-	390	380	2,800	3,700	3,600	4,200	<5	<5	<1	8
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	<10	324	366	555	1,520	-	-	-	-	<1	<2
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	396	307	1,190	735	-	-	-	-	<1	<2
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<50	<50	-	-	-	2,300	-	2,400	2,200	<5	<5	<1	3
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<50	<50	-	-	-	2,300	1,900	2,400	2,200	<5	<5	<1	3
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	80	110	-	11	10	450	410	16,000	15,000	16	19	<1	2
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	22	-	960	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	70	70	-	34	34	6,600	6,400	7,400	7,300	<5	<5	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	35	-	6,700	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	<50	-	-	278	-	811	-	3,030	-	<10	<1	<2
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	-	266	210	497	434	-	-	-	-	<1	<2
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	-	308	222	590	383	-	-	-	-	<1	<2
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	214	166	385	287	-	-	-	-	<1	<2
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<1	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	<50	<50	-	240	230	5,210	4,710	2,640	2,640	<10	<10	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	<50	<50	-	177	172	3,480	3,280	1,840	1,860	<10	<10	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	<50	<50	-	282	258	4,860	4,950	2,320	2,310	<10	<10	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	<50	<50	-	294	327	5,420	5,170	1,930	2,100	<10	<10	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	<50	<50	-	6	3	726	629	5,700	5,130	10	<10	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	<50	<50	-	5	4	1,320	1,330	5,380	5,630	<10	<10	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	<50	<50	-	4	4	1,060	1,200	5,590	5,510	<10	<10	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	<50	<50	-	6	5	752	751	7,100	7,390	<10	<10	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	<50	<50	-	2	2	680	651	7,250	7,240	<10	<10	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	-	15	2	933	577	-	-	-	-	<1	<2
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	12	3	955	649	-	-	-	-	<1	<2
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	<10	17	6	289	148	-	-	-	-	<1	<2
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	187	4	1,350	537	-	-	-	-	<1	<2
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	-	10	<10	360	301	-	-	-	-	<1	<2

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Boron	Boron (filtered)	Chromium (Trivalent) (filtered)	Cobalt	Cobalt (filtered)	Manganese	Manganese (filtered)	Strontium	Strontium (filtered)	Vanadium	Vanadium (filtered)	Benzene	Toluene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	1	1	1	1					1	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		370	370				1,900	1,900					950	180
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	<50	<50	-	20	4	645	362	10,700	5,260	<10	<10	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	60	80	-	13	12	681	654	9,480	8,650	<10	<10	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	<50	<50	-	14	9	645	634	9,460	9,590	<10	<10	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	<50	<50	-	57	81	2,380	1,810	7,470	5,810	<10	<10	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<50	<50	-	91	84	1,100	988	1,010	905	<10	<10	<1	<2
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<50	<50	-	12	11	275	278	123	162	<10	<10	<1	<2
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	70	90	-	81	73	3,800	3,300	2,600	2,400	26	20	<1	2
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	110	-	5,200	-	-	-	-	-	<1	5
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	60	60	-	110	110	26,000	23,000	10,000	9,800	<5	<5	<1	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<50	<50	-	825	785	9,990	9,730	3,790	3,720	<10	<10	<1	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	<50	<50	-	1,180	1,110	14,400	13,500	3,380	3,220	<10	<10	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	-	1,800	1,160	9,960	6,540	-	-	-	-	<1	<2
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	1,220	870	9,920	3,560	-	-	-	-	<1	<2
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	120	90	-	170	140	8,600	6,300	6,000	4,400	<5	<5	<1	1
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<50	<50	-	63	58	1,300	1,200	760	700	<5	<5	<2	78
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	<10	59	56	223	214	-	-	-	-	<5	<5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	<10	60	57	225	215	-	-	-	-	<1	<2
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	91	52	168	154	-	-	-	-	<1	<2
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	107	103	267	282	-	-	-	-	<1	<2
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	87	96	239	131	-	-	-	-	<1	<2

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			BTEX																			
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (VOC)	Total BTEX (Calculated)	Total BTEX	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)	C10 - C40 (Sum of total)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2	2	5		1	20	50	100	50	50	100
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		80	350											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<1	<1	<2	<3	-	-	-	<20	<50	<100	<100	<100	<100
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<2	<2	<2	<2	<5	-	<1	<20	280	370	<50	650	680
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	20	<50	<100	<50	<50	<100
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<10	<10	<10	<5	<10	-	<5	2,690	<50	<100	<50	<50	<100
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<10	<10	<10	<5	<10	-	<5	2,620	<50	<100	<50	<50	<100
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<10	<10	<10	<5	<10	-	<5	2,700	<50	<100	<50	<50	<100
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<10	<10	<5	<10	-	<5	2,380	<50	<100	<50	<50	<100
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<10	<10	<5	<10	-	<5	2,020	<50	<100	<50	<50	<100
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<5	<5	<5	<2	<5	-	<2	1,300	<50	<100	<50	<50	<100
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<5	<5	<5	<2	<5	-	<2	1,710	<50	<100	<50	<50	<100
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<5	<5	<5	<2	<5	-	<2	2,250	<50	<100	<50	<50	<100
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<5	<5	<5	<2	<5	-	<2	2,670	<50	<100	<50	<50	<100
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<5	<5	<5	<2	<5	-	<2	2,660	<50	<100	<50	<50	<100
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<5	<5	<5	<2	<5	-	<2	2,470	<50	<100	<50	<50	<100
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (VOC)	Total BTEX (Calculated)	Total BTEX	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)	C10 - C40 (Sum of total)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2	2	5		1	20	50	100	50	50	100
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		80	350											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	3	2	<2	2	<5	-	5	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<2	2	<2	2	<5	-	2	<20	90	240	<50	330	330
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<2	4	2	6	<5	-	6	20	130	180	<50	310	300
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	2	<20	260	<100	<50	260	280
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	2	<20	330	170	<50	500	490
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	1	<20	200	<100	<50	200	220
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	2	<20	220	<100	<50	220	240
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	2	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<50	<50	<50	<25	<50	-	<25	21,900	<50	<100	<50	<50	<100
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<50	<50	<50	<25	<50	-	<25	17,300	<50	<100	<50	<50	<100
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<50	<50	<50	<25	<50	-	<25	26,900	<50	<100	<50	<50	<100
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<50	<50	<50	<25	<50	-	<25	16,100	<50	<100	<50	<50	<100
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<20	<20	<20	<10	<20	-	<10	11,100	<50	<100	<50	<50	<100
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<50	<50	<50	<25	<50	-	<25	14,100	<50	<100	<50	<50	<100
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<50	<50	<50	<25	<50	-	<25	15,300	<50	<100	<50	<50	<100
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<50	<50	<50	<25	<50	-	<25	21,700	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<10	<10	<10	<5	<10	-	<5	1,990	200	<100	<50	200	230
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<10	<10	<10	<5	<10	-	<5	1,890	140	<100	<50	140	160
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<5	<5	<5	<2	<5	-	<2	1,080	290	130	<50	420	340
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<5	<5	<5	<2	<5	-	<2	1,210	210	<100	<50	210	240
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	70	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	30	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<5	<5	<5	<2	<5	-	<2	740	220	230	120	570	530
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	80	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	270	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	120	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	50	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	40	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	30	<50	<100	<50	<50	<100
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	190	300	<50	490	190
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	110	160	<50	270	220
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	110	380	<50	490	450
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (VOC)	Total BTEX (Calculated)	Total BTEX	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)	C10 - C40 (Sum of total)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2	2	5		1	20	50	100	50	50	100
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		80	350											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	20	<50	<100	<50	<50	<100
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<2	<2	<2	<2	<5	-	<1	320	<50	<100	<50	<50	<100
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	<2	<2	<2	<2	<5	-	<1	130	<50	<100	<50	<50	<100
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	<2	<2	<2	<2	<5	-	<1	<20	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	<2	<2	<2	<2	<5	-	<1	<20	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	<2	<2	<2	<2	<5	-	<1	<20	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<2	<2	<2	<2	<5	-	7	<20	240	940	130	1,310	1,340
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	<50	<100	<50	<50	<100
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<2	<2	<2	<2	<5	-	6	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<2	<2	<2	<2	<5	-	<1	<20	<50	280	110	390	320
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<2	<2	<2	<2	-	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<2	<2	<2	<2	-	-	<1	<20	<50	<100	<50	<50	<100
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	<2	<2	<2	<2	-	-	<1	<20	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<2	<2	<2	<2	-	-	<1	<20	<50	<100	<50	<50	<100
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	<2	<2	<2	<2	-	-	<1	<20	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	<2	<2	<2	<2	-	-	56	100	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<2	<2	<2	<2	-	-	56	100	<50	<100	<50	<50	<100
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<2	<2	<2	<2	-	-	<1	<20	<50	<100	<50	<50	<100
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<2	<2	<2	<2	-	-	<1	<20	<50	<100	<50	<50	<100
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (VOC)	Total BTEX (Calculated)	Total BTEX	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)	C10 - C40 (Sum of total)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2	2	5		1	20	50	100	50	50	100
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		80	350											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<2	<2	3	3	-	-	8	<20	<50	300	<50	300	280
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (VOC)	Total BTEX (Calculated)	Total BTEX	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)	C10 - C40 (Sum of total)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2	2	5		1	20	50	100	50	50	100
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		80	350											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<1	<1	<2	<3	-	-	-	<20	<50	<100	<100	<100	<100
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<1	<1	<2	<3	-	-	-	<20	<50	<100	<100	<100	<100
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	<2	<3	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	<2	<3	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<1	<1	<2	<3	-	-	-	<20	60	200	<100	260	200
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<1	<1	<2	<3	-	-	-	120	<50	<100	<100	<100	<100
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<1	<1	<2	<3	-	-	-	50	<50	<100	<100	<100	<100
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<1	<1	<2	<3	-	-	-	<20	<50	200	<100	200	200
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	<2	<2	<2	<2	<5	-	<1	<20	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<1	<1	<2	<3	-	-	-	<20	<50	<100	<100	<100	<100
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<1	<1	<2	<3	-	-	-	<20	<50	<100	<100	<100	<100
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<1	<1	<2	<3	-	-	-	<20	<50	300	<100	300	350
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	220	80	300	270
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<1	<1	<2	<3	-	-	-	<20	<50	<100	<100	<100	<100
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<2	<2	<2	<2	-	<1	-	30	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	30	<50	<100	<50	<50	<100
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	<20	60	1,480	1,060	2,600	2,960
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (VOC)	Total BTEX (Calculated)	Total BTEX	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)	C10 - C40 (Sum of total)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2	2	5		1	20	50	100	50	50	100
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		80	350											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<2	<2	<2	<2	-	-	<1	<20	<50	260	270	530	610
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<2	<2	<2	<2	-	-	<1	<20	<50	150	120	270	230
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<1	<1	<2	<3	-	-	-	<20	<50	300	<100	300	300
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<1	<1	<2	<3	-	-	-	<20	190	<100	<100	190	170
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<1	<1	<2	<3	-	-	-	<20	110	<100	<100	110	<100
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<2	<2	<2	<2	-	-	<1	<20	<50	150	110	260	230
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<2	<2	<2	<2	<5	-	<1	30	<50	<100	<50	<50	<100
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<2	<2	<2	<2	<5	-	<1	<20	<50	<100	<50	<50	<100
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<1	<1	<2	<3	-	-	-	<20	<50	2,300	300	2,600	2,850
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<2	<2	<4	<6	-	-	-	90	<50	800	<100	800	900
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<5	<5	<5	<2	<5	-	<2	1,580	<50	<100	<50	<50	<100
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	<2	<2	<2	<2	<5	-	<1	2,340	<50	<100	<50	<50	<100
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	40	<50	<100	<50	<50	<100
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	30	<50	<100	<50	<50	<100
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<5	-	<1	30	<50	<100	<50	<50	<100

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

															TPH							
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	F1 (C6 - C10)	F1 (C6 - C10) less BTEX	F2 (C10 - C16)	F2 C10 - C16 (minus Naphthalene)	F3 (C16 - C34)	F4 (C34 - C40)	>C10 - C16 Fraction minus Naphthalene (F2) (SG)	>C10 - C40 Fraction (sum) (SG)	>C10-C16	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	TRH C10-C36 (Total) (after silica gel clean-up)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/m³	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	20	20	100	100	100	100	100	100		100	100	100	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<20	<100	<50	<50	<100	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<20	<20	380	380	300	<100	-	-	-	-	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	30	30	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	3,060	3,060	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	2,990	2,990	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	2,720	2,720	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	2,390	2,390	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	2,030	2,030	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	1,280	1,280	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	1,690	1,690	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	2,230	2,230	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	2,960	2,960	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	2,950	2,950	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	2,740	2,740	<100	<100	<100	<100	-	-	-	-	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	F1 (C6 - C10)	F1 (C6 - C10) less BTEX	F2 (C10 - C16)	F2 C10 - C16 (minus Naphthalene)	F3 (C16 - C34)	F4 (C34 - C40)	>C10 - C16 Fraction minus Naphthalene (F2) (SG)	>C10 - C40 Fraction (sum) (SG)	>C10-C16	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	TRH C10-C36 (Total) (after silica gel clean-up)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/m³	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	20	20	100	100	100	100	100	100		100	100	100	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	20	<20	220	220	110	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	20	<20	160	160	140	<100	<100	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<20	<20	280	280	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<20	<20	350	350	140	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<20	<20	220	220	<100	<100	<100	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<20	<20	240	240	<100	<100	<100	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	22,200	22,200	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	17,500	17,500	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	26,400	26,400	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	15,700	15,700	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	11,400	11,400	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	14,300	14,300	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	15,600	15,600	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	22,200	22,200	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	1,990	1,990	230	230	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	1,890	1,890	160	160	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	890	890	340	340	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	1,040	1,040	240	240	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	70	70	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	20	20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	700	700	250	250	280	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	80	80	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	270	270	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	110	110	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	50	50	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	30	30	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	40	40	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<20	<20	190	190	<100	<100	<100	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<20	<20	120	120	100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<20	<20	140	140	310	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	F1 (C6 - C10)	F1 (C6 - C10) less BTEX	F2 (C10 - C16)	F2 C10 - C16 (minus Naphthalene)	F3 (C16 - C34)	F4 (C34 - C40)	>C10 - C16 Fraction minus Naphthalene (F2) (SG)	>C10 - C40 Fraction (sum) (SG)	>C10-C16	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	TRH C10-C36 (Total) (after silica gel clean-up)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/m³	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	20	20	100	100	100	100	100	100		100	100	100	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	30	30	<100	<100	<100	<100	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	320	320	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	150	150	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	<20	<20	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	<20	<20	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	<20	<20	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<20	<20	<100	<100	<100	<100	<100	<100	-	<100	<100	<100	<50
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<20	<20	720	720	620	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	<100	<100	<100	<100	<100	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<20	<20	<100	<100	320	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<20	<20	<100	<100	<100	<100	<100	<100	-	<100	<100	<100	<50
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	<20	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	<20	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	30	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	90	30	<100	<100	<100	<100	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<20	<20	<100	<100	<100	<100	<100	<100	-	<100	<100	<100	<50
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	F1 (C6 - C10)	F1 (C6 - C10) less BTEX	F2 (C10 - C16)	F2 C10 - C16 (minus Naphthalene)	F3 (C16 - C34)	F4 (C34 - C40)	>C10 - C16 Fraction minus Naphthalene (F2) (SG)	>C10 - C40 Fraction (sum) (SG)	>C10-C16	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	TRH C10-C36 (Total) (after silica gel clean-up)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/m³	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	20	20	100	100	100	100	100	100		100	100	100	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<20	<20	280	280	<100	<100	<100	<100	-	<100	<100	<100	<50
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	F1 (C6 - C10)	F1 (C6 - C10) less BTEX	F2 (C10 - C16)	F2 C10 - C16 (minus Naphthalene)	F3 (C16 - C34)	F4 (C34 - C40)	>C10 - C16 Fraction minus Naphthalene (F2) (SG)	>C10 - C40 Fraction (sum) (SG)	>C10-C16	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	TRH C10-C36 (Total) (after silica gel clean-up)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/m³	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	20	20	100	100	100	100	100	100		100	100	100	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<20	<100	<50	<50	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<20	<100	<50	<50	<100	<100	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	20	<20	<50	<50	200	<100	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	100	50	<50	<50	<100	<100	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	50	50	<50	<50	<100	<100	-	-	-	<50	<100	<100	<100
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<20	<20	<50	<50	200	<100	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	<20	<20	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<20	<100	<50	<50	<100	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<20	<20	<50	<50	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<20	<20	50	50	300	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<20	<20	<100	<100	270	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<20	<20	<50	<50	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	30	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	20	20	<100	<100	<100	<100	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<20	<20	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	<20	<20	<100	<100	2,270	690	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	F1 (C6 - C10)	F1 (C6 - C10) less BTEX	F2 (C10 - C16)	F2 C10 - C16 (minus Naphthalene)	F3 (C16 - C34)	F4 (C34 - C40)	>C10 - C16 Fraction minus Naphthalene (F2) (SG)	>C10 - C40 Fraction (sum) (SG)	>C10-C16	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)	TRH C10-C36 (Total) (after silica gel clean-up)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/m³	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	20	20	100	100	100	100	100	100		100	100	100	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<20	<20	<100	<100	450	160	<100	<100	-	<100	<100	<100	<50
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<20	<20	<100	<100	230	<100	<100	<100	-	<100	<100	<100	<50
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<20	<20	<50	<50	300	<100	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<20	<100	170	170	<100	<100	-	-	-	<50	<100	<100	100
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<20	<20	90	90	<100	<100	-	-	-	<50	<100	<100	<100
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<20	<20	<100	<100	230	<100	<100	<100	-	<100	<100	<100	<50
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	30	30	<100	<100	<100	<100	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<20	<20	<100	<100	<100	<100	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<20	<20	50	50	2,600	200	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	100	20	<50	<50	900	<100	-	-	-	<50	<100	<100	<100
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	1,570	1,570	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	2,340	2,340	<100	<100	<100	<100	-	<100	-	<100	<100	<100	<50
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	40	40	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	40	40	<100	<100	<100	<100	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	30	30	<100	<100	<100	<100	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	C6 - C10 Fraction	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-c,d)pyrene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	100	50		1	1	1	1	1	1	1	1	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								0.4					1.4	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	<50	<100	<50	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	<50	<100	<50	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	<50	<100	<50	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	<50	<100	<50	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	<50	<100	<50	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	C6 - C10 Fraction	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-c,d)pyrene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	100	50		1	1	1	1	1	1	1	1	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								0.4					1.4	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	<50	<100	<50	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<50	<100	<50	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<50	<100	<50	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<50	<100	<50	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<50	<100	<50	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	C6 - C10 Fraction	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-c,d)pyrene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	100	50		1	1	1	1	1	1	1	1	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								0.4					1.4	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	<50	<100	<50	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	<50	<100	<50	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<50	<100	<50	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<50	<100	<50	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<50	<100	<50	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	<20	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	<20	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	90	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	-	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<50	<100	<50	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	C6 - C10 Fraction	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-c,d)pyrene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	100	50		1	1	1	1	1	1	1	1	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								0.4					1.4	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<50	<100	<50	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	C6 - C10 Fraction	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-c,d)pyrene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	100	50		1	1	1	1	1	1	1	1	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								0.4					1.4	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<50	<100	<100	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<50	<100	<50	30	<1	<1	-	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	C6 - C10 Fraction	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-c,d)pyrene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	100	50		1	1	1	1	1	1	1	1	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								0.4					1.4	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<50	<100	<50	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<50	<100	<50	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<50	100	<100	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<50	<100	<100	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<50	<100	<50	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<50	<100	<100	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<50	<100	<50	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	<50	<100	<50	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

													PAH								
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Phenanthrene	Pyrene	PAHs (Sum of total)	Naphthalene	Benzo(a) pyrene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene TEQ (lower bound) *	Fluorene	PAHs (Vic EPA List)	Benzo(b+j+k)fluoranthene	Naphthalene-PAH	Benzo(a)pyrene TEQ calc (Zero)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	0.5	1	0.5	1	1		1	0.5	4		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		2			16	0.2								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	-	-	<0.5
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Phenanthrene	Pyrene	PAHs (Sum of total)	Naphthalene	Benzo(a) pyrene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene TEQ (lower bound) *	Fluorene	PAHs (Vic EPA List)	Benzo(b+j+k)fluoranthene	Naphthalene-PAH	Benzo(a)pyrene TEQ calc (Zero)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	0.5	1	0.5	1	1		1	0.5	4		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		2			16	0.2								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<2	<2	3	3	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Phenanthrene	Pyrene	PAHs (Sum of total)	Naphthalene	Benzo(a) pyrene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene TEQ (lower bound) *	Fluorene	PAHs (Vic EPA List)	Benzo(b+j+k)fluoranthene	Naphthalene-PAH	Benzo(a)pyrene TEQ calc (Zero)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	0.5	1	0.5	1	1		1	0.5	4		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		2			16	0.2								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	<2	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<1.0	<1.0	1.5	1.5	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	<1	<1	<0.5	<1	<0.5	<1	<1	-	<1	-	-	-	<0.5
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<1	<1	-	<1	<0.5	<1	<1	-	<1	<0.5	-	-	<0.5
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<1	<1	-	<1	<0.5	<1	<1	-	<1	<0.5	-	-	<0.5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	<1	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<1	<1	-	<1	<0.5	<1	<1	-	<1	<0.5	-	-	<0.5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	<1	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	<1	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<1	<1	-	<1	<0.5	<1	<1	-	<1	<0.5	-	-	<0.5
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<1	<1	-	<1	<0.5	<1	<1	-	<1	<0.5	-	-	<0.5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<1	<1	<0.5	<1	<0.5	<1	<1	<0.5	<1	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Phenanthrene	Pyrene	PAHs (Sum of total)	Naphthalene	Benzo(a) pyrene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene TEQ (lower bound) *	Fluorene	PAHs (Vic EPA List)	Benzo(b+j+k)fluoranthene	Naphthalene-PAH	Benzo(a)pyrene TEQ calc (Zero)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	0.5	1	0.5	1	1		1	0.5	4		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		2			16	0.2								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<1	<1	<0.5	<1	<0.5	<1	<1	<0.5	<1	-	<4	-	-
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Phenanthrene	Pyrene	PAHs (Sum of total)	Naphthalene	Benzo(a) pyrene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene TEQ (lower bound) *	Fluorene	PAHs (Vic EPA List)	Benzo(b+j+k)fluoranthene	Naphthalene-PAH	Benzo(a)pyrene TEQ calc (Zero)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	0.5	1	0.5	1	1		1	0.5	4		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		2			16	0.2								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	<0.01	0.02	0.07	0.04	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	<0.01	0.2	0.23	0.03	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<1	<1	<0.5	<5	-	<1	<1	-	<1	-	-	<1	<0.5
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	<2	<2	<2	<2	-	-	-	<2	-	<4	-	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Phenanthrene	Pyrene	PAHs (Sum of total)	Naphthalene	Benzo(a) pyrene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene TEQ (lower bound) *	Fluorene	PAHs (Vic EPA List)	Benzo(b+j+k)fluoranthene	Naphthalene-PAH	Benzo(a)pyrene TEQ calc (Zero)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	0.5	1	0.5	1	1		1	0.5	4		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		2			16	0.2								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<1	<1	<0.5	<1	<0.5	<1	<1	<0.5	<1	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<1	<1	<0.5	<1	<0.5	<1	<1	<0.5	<1	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<1	<1	<0.5	<1	<0.5	<1	<1	<0.5	<1	-	<4	-	-
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<0.01	<0.01	0.1	0.08	<0.01	<0.01	<0.01	-	0.02	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-	<0.5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

Monitoring Zone	Location Code	Date	Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2,4-Dimethylphenol	2,4,5-Trichlorophenol	2-Nitrophenol	3/4-Methylphenol (m/p-cresol)	4-chloro-3-methylphenol
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	1	1	1	1	1	1	2	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2							20	160						
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	12	<2
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2,4-Dimethylphenol	2,4,5-Trichlorophenol	2-Nitrophenol	3/4-Methylphenol (m/p-cresol)	4-chloro-3-methylphenol
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	1	1	1	1	1	1	2	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2							20	160						
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	139	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	112	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	324	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	218	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	17	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	231	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2,4-Dimethylphenol	2,4,5-Trichlorophenol	2-Nitrophenol	3/4-Methylphenol (m/p-cresol)	4-chloro-3-methylphenol
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	1	1	1	1	1	1	2	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2							20	160						
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<2	<1
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2,4-Dimethylphenol	2,4,5-Trichlorophenol	2-Nitrophenol	3/4-Methylphenol (m/p-cresol)	4-chloro-3-methylphenol
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	1	1	1	1	1	1	2	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2							20	160						
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2,4-Dimethylphenol	2,4,5-Trichlorophenol	2-Nitrophenol	3/4-Methylphenol (m/p-cresol)	4-chloro-3-methylphenol
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	1	1	1	1	1	1	2	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2							20	160						
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<5	<5	<5	<5	<5	<10	<3	<3	<3	<10	<10	-	<10
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<4	<2
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2,4-Dimethylphenol	2,4,5-Trichlorophenol	2-Nitrophenol	3/4-Methylphenol (m/p-cresol)	4-chloro-3-methylphenol
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	1	1	1	1	1	1	2	1
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2							20	160						
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<5	<5	<5	<5	<5	<10	-	<3	<3	-	<10	-	<10
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<5	<2	<2	<2	<2	<10	-	<3	<3	-	<10	-	<10
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

													Phenols								
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Pentachlorophenol	Phenol	2-Chlorophenol	2-Methylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Dinoseb	Phenols (Total Non Halogenated)	Tetrachlorophenols	3-&4-methylphenol	Phenols (Total Halogenated)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	1	1	1								2	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		10	320	490		45								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<4	3	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	<2.0	<1.0	<1.0	<1.0	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Pentachlorophenol	Phenol	2-Chlorophenol	2-Methylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Dinoseb	Phenols (Total Non Halogenated)	Tetrachlorophenols	3-&4-methylphenol	Phenols (Total Halogenated)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	1	1	1								2	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		10	320	490		45								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<4	3	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<4	2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<4	2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<4	32	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<4	29	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<4	34	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<4	23	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<4	2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<4	25	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<4	31	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<4	19	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<4	17	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Pentachlorophenol	Phenol	2-Chlorophenol	2-Methylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Dinoseb	Phenols (Total Non Halogenated)	Tetrachlorophenols	3-&4-methylphenol	Phenols (Total Halogenated)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	1	1	1								2	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		10	320	490		45								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	<2	<1	<1	<1	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<2	<1	<1	<1	-	-	-	-	-	-	-	<2	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<2	<1	<1	<1	-	-	-	-	-	-	-	<2	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<2	<1	<1	<1	-	-	-	-	-	-	-	<2	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<2	<1	<1	<1	-	-	-	-	-	-	-	<2	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<2	<1	<1	<1	-	-	-	-	-	-	-	<2	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<4	<2	<2	<2	-	-	-	-	-	-	-	6	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Pentachlorophenol	Phenol	2-Chlorophenol	2-Methylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Dinoseb	Phenols (Total Non Halogenated)	Tetrachlorophenols	3-&4-methylphenol	Phenols (Total Halogenated)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	1	1	1								2	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		10	320	490		45								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<4	<2	<2	<2	-	-	-	-	-	-	-	<4	-
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Pentachlorophenol	Phenol	2-Chlorophenol	2-Methylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Dinoseb	Phenols (Total Non Halogenated)	Tetrachlorophenols	3-&4-methylphenol	Phenols (Total Halogenated)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	1	1	1								2	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		10	320	490		45								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<10	<3	<3	<3	<30	<30	-	<30	-	-	-	<6	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Pentachlorophenol	Phenol	2-Chlorophenol	2-Methylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Dinoseb	Phenols (Total Non Halogenated)	Tetrachlorophenols	3-&4-methylphenol	Phenols (Total Halogenated)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	1	1	1								2	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		10	320	490		45								
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<10	<3	<3	<3	<30	<30	-	<30	-	-	-	<6	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<4	<2	<2	<2	-	-	-	-	-	-	-	<4	-
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<10	<3	<3	<3	<30	<30	-	<30	-	-	-	<6	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<4	<2	<2	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,3,4,6-Tetrachlorophenol	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		20								0.01				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,3,4,6-Tetrachlorophenol	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		20								0.01				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,3,4,6-Tetrachlorophenol	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		20								0.01				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,3,4,6-Tetrachlorophenol	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		20								0.01				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,3,4,6-Tetrachlorophenol	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		20								0.01				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	<0.01
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<2	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.01	-	<0.01	<0.01	<0.01	<0.01
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	<0.1	<0.1	-	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	<0.1	<0.1	-	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.01	-	<0.01	<0.01	<0.01	<0.01
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	0.15	<0.01	<0.01	<0.01	0.22	0.06	0.01	<0.01	<0.01	<0.01	0.23	0.16
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,3,4,6-Tetrachlorophenol	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		20								0.01				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	<0.1	<0.1	-	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			OCP																			
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Hexachlorobenzene	Methoxychlor	chlordane	Endrin ketone	DDT+DDE+DDD	Heptachlor epoxide	Toxaphene	Organochlorine pesticides EPAVic	
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg
EQL			1,000	1,000	1	1	0.1	0.1	1	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		0.02		0.2	0.09	0.1		0.08				0.2		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Hexachlorobenzene	Methoxychlor	chlordane	Endrin ketone	DDT+DDE+DDD	Heptachlor epoxide	Toxaphene	Organochlorine pesticides EPAVic
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg
EQL			1,000	1,000	1	1	0.1	0.1	1	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		0.02		0.2	0.09	0.1		0.08				0.2		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Hexachlorobenzene	Methoxychlor	chlordane	Endrin ketone	DDT+DDE+DDD	Heptachlor epoxide	Toxaphene	Organochlorine pesticides EPAVic
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg
EQL			1,000	1,000	1	1	0.1	0.1	1	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		0.02		0.2	0.09	0.1		0.08				0.2		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	-	-	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Hexachlorobenzene	Methoxychlor	chlordane	Endrin ketone	DDT+DDE+DDD	Heptachlor epoxide	Toxaphene	Organochlorine pesticides EPAVic	
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg
EQL			1,000	1,000	1	1	0.1	0.1	1	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		0.02		0.2	0.09	0.1		0.08				0.2		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Hexachlorobenzene	Methoxychlor	chlordane	Endrin ketone	DDT+DDE+DDD	Heptachlor epoxide	Toxaphene	Organochlorine pesticides EPAVic
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg
EQL			1,000	1,000	1	1	0.1	0.1	1	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		0.02		0.2	0.09	0.1		0.08				0.2		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	-	<0.01	<0.1	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	-	-	<0.00001
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.1	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	<2	<0.2	<0.2	<0.2	<1	-	<0.002
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<0.1	<0.1	<0.1	<0.1	<0.1	-	<2	<0.1	<0.2	<0.1	<1	-	<0.002
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	-	-	<0.00001
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<2	<0.1	<0.2	<0.1	<1	-	<0.002
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.1	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	-	-	<0.00001
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<2	<0.1	<0.2	<0.1	<1	-	<0.002
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	-	<0.00001
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<1	-	<0.002
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	<0.01	<0.01	<0.01	<0.01	<0.01	0.15	0.06	0.21	0.37	<0.01	<0.1	-	0.001
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	<0.5	-	-	-	-	-	<0.5	-	<0.5	-	-	-
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Hexachlorobenzene	Methoxychlor	chlordane	Endrin ketone	DDT+DDE+DDD	Heptachlor epoxide	Toxaphene	Organochlorine pesticides EPAVic	
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg
EQL			1,000	1,000	1	1	0.1	0.1	1	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		0.02		0.2	0.09	0.1		0.08				0.2		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<2	<0.1	<0.2	<0.1	<1	-	<0.002
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	-	<0.00001
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	-	-	<0.00001
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-	-
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	0.1	0.4	<0.1	<0.1	<0.1	-	<2	<0.1	<0.2	<0.1	<1	-	<0.002
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	-	-	<0.00001
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Other organochlorine pesticides EPAVic		Total OCP	Chlordane (cis)	Chlordane (trans)	p,p-DDT	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1				0.5	0.5			0.5		0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2									0.02					0.01
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	-	-	-	-	-	-	-	<2	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Other organochlorine pesticides EPAVic		Total OCP	Chlordane (cis)	Chlordane (trans)	p,p-DDT	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1				0.5	0.5			0.5		0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2									0.02					0.01
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Other organochlorine pesticides EPAVic		Total OCP	Chlordane (cis)	Chlordane (trans)	p,p-DDT	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1				0.5	0.5			0.5		0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2									0.02					0.01
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Other organochlorine pesticides EPAVic		Total OCP	Chlordane (cis)	Chlordane (trans)	p,p-DDT	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1				0.5	0.5			0.5		0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2									0.02					0.01
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	<2	<2
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Other organochlorine pesticides EPAVic		Total OCP	Chlordane (cis)	Chlordane (trans)	p,p-DDT	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1				0.5	0.5			0.5		0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2									0.02					0.01
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	<0.01	<1	<1	<1	-	-	<1	<10
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	<0.00001	-	-	-	-	<1	<1	<1	-	-	<1	<10
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	<0.01	<1	<1	<1	-	-	<1	<10
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	<0.002	-	-	-	-	<2	<2	<2	-	-	<2	<20
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	<0.002	-	-	-	-	<2	<2	<2	-	-	<2	<20
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	<0.00001	-	-	-	-	<1	<1	<1	-	-	<1	<10
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	<0.002	-	-	-	-	<2	<2	<2	-	-	<2	<20
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	-	<0.01	<1	<1	<1	-	-	<1	<10
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	<0.00001	-	-	-	-	<1	<1	<1	-	-	<1	<10
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	<0.002	-	-	-	<0.2	<2	<2	<2	-	-	<2	<20
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	<0.00001	-	-	-	<0.01	<1	<1	<1	-	-	<1	<10
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	<0.002	-	-	-	<0.2	<2	<2	<2	-	-	<2	<20
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	0.00064	-	-	-	0.37	<1	<1	<1	-	-	<1	<10
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	-	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	-
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Other organochlorine pesticides EPAVic		Total OCP	Chlordane (cis)	Chlordane (trans)	p,p-DDT	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1				0.5	0.5			0.5		0.5	0.5	0.5	0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2									0.02					0.01
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	<0.002	-	-	-	<0.2	<2	<2	<2	-	-	<2	<20
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	<0.00001	-	-	-	<0.01	<1	<1	<1	-	-	<1	<10
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	<0.00001	-	-	-	-	<1	<1	<1	-	-	<1	<10
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	-	-	-	-	-	-	-	-	-	-	<2	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	<0.002	-	-	-	-	<2	<2	<2	-	-	<2	<20
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	<0.00001	-	-	-	-	<1	<1	<1	-	-	<1	<10
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

																		Organophosphorous Pesticides			
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Coumaphos	Chlorpyrifos-methyl	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Disulfoton	Dimethoate	Ethoprop	Fensulfothion	Ethion	Fenitrothion	Fenthion
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5			0.5	0.5		0.5			0.5		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.01			0.15				0.2	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Coumaphos	Chlorpyrifos-methyl	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Disulfoton	Dimethoate	Ethoprop	Fensulfothion	Ethion	Fenitrothion	Fenthion
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5			0.5	0.5		0.5			0.5		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.01			0.15				0.2	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Coumaphos	Chlorpyrifos-methyl	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Disulfoton	Dimethoate	Ethoprop	Fensulfothion	Ethion	Fenitrothion	Fenthion
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5			0.5	0.5		0.5			0.5		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.01			0.15				0.2	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Coumaphos	Chlorpyrifos-methyl	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Disulfoton	Dimethoate	Ethoprop	Fensulfothion	Ethion	Fenitrothion	Fenthion
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5			0.5	0.5		0.5			0.5		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.01			0.15				0.2	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Coumaphos	Chlorpyrifos-methyl	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Disulfoton	Dimethoate	Ethoprop	Fensulfothion	Ethion	Fenitrothion	Fenthion
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5			0.5	0.5		0.5			0.5		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.01			0.15				0.2	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<20	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<20	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<20	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<20	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<20	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	<0.5	-	-	-	<0.5	-	-	-	-	<0.5	-	<0.5
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Coumaphos	Chlorpyrifos-methyl	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Disulfoton	Dimethoate	Ethoprop	Fensulfothion	Ethion	Fenitrothion	Fenthion
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.5			0.5	0.5		0.5			0.5		0.5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.01			0.15				0.2	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<20	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	<2	-	-	<2	<2	-	<2	-	-	<2	-	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<20	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	-	<0.5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

Monitoring Zone	Location Code	Date	Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	EPN	Merphos	Malathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Prothiofos	Ronnel	Terbufos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.5	2		2					0.5		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				0.05										
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	<2	-	-	-	-	-	-	-	<2	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	EPN	Merphos	Malathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Prothiofos	Ronnel	Terbufos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.5	2		2					0.5		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				0.05										
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	EPN	Merphos	Malathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Prothiofos	Ronnel	Terbufos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.5	2		2					0.5		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				0.05										
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	<0.5	<2	-	<2	-	-	-	-	<0.5	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	<0.5	<2	-	<2	-	-	-	-	<0.5	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	<0.5	<2	-	<2	-	-	-	-	<0.5	-	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	<0.5	<2	-	<2	-	-	-	-	<0.5	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	<0.5	<2	-	<2	-	-	-	-	<0.5	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	<0.5	<2	-	<2	-	-	-	-	<0.5	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	EPN	Merphos	Malathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Prothiofos	Ronnel	Terbufos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.5	2		2					0.5		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				0.05										
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	-	<2	-	-	-	-	-	-	-	<2	-	-
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	EPN	Merphos	Malathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Prothiofos	Ronnel	Terbufos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.5	2		2					0.5		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				0.05										
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	-	<2	<2
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	-	<2	<2
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	-	<2	<2
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	-	<2	-	<2	-	-	-	-	<0.5	-	-
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	<2	-	-	-	-	-	-	-	<2	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	EPN	Merphos	Malathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Prothiofos	Ronnel	Terbufos
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.5	2		2					0.5		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				0.05										
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	-	<2	-	-	-	-	-	-	-	<2	-	-
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	-	<2	<2
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

											Amino Aliphatics				Amino Aromatics				Alkal		
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Trichloronate	Tetrachlorvinphos	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	2-naphthylamine	Diphenylamine	N-Nitrosodiphenyl & Diphenylamine	Alkalinity (total as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Bicarbonate Alkalinity as CaCO3
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			2	2	2	2	2			4	1,000	1,000	1,000
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	990,000	<20	990,000
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	1,000,000	<20	1,000,000
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	375,000	<1,000	375,000
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	661,000	<1,000	661,000
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	254,000	<1,000	254,000
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	232,000	<1,000	232,000
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	51,000	<1,000	51,000
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	51,000	<1,000	51,000
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	2,000	<1,000	2,000
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	10,000	<1,000	10,000
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	2,000	<1,000	2,000
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	83,000	<1,000	83,000
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	74,000	<1,000	74,000
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	274,000	<1,000	274,000
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	366,000	<1,000	366,000
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	443,000	<1,000	443,000
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	289,000	<1,000	289,000
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	280,000	<1,000	280,000
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	290,000	<1,000	290,000
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	282,000	<1,000	282,000
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	252,000	<1,000	252,000
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	258,000	<1,000	258,000
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	<2	<2	<2	<2	<2	-	-	<4	56,000	<1,000	56,000
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	<2	<2	<2	<2	<2	-	-	<4	144,000	<1,000	144,000
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	<2	<2	<2	<2	<2	-	-	<4	53,000	<1,000	53,000
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	49,000	<1,000	49,000
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	26,000	<1,000	26,000
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	55,000	<1,000	55,000
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	47,000	<1,000	47,000
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	3,000	<1,000	3,000
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	51,000	<1,000	51,000
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	92,000	<1,000	92,000
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	92,000	<1,000	92,000
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	89,000	<1,000	89,000
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	<2	<2	<2	<2	<2	-	-	<4	<1,000	<1,000	<1,000
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	<2	<2	<2	<2	<2	-	-	<4	<1,000	<1,000	<1,000
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	57,000	<1,000	57,000
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	52,000	<1,000	52,000
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	71,000	<1,000	71,000
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	24,000	<1,000	24,000
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	<2	<2	<2	<2	<2	-	-	<4	44,000	<1,000	44,000
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	2,000	<1,000	2,000
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	<1,000	<1,000	<1,000
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	<1,000	<1,000	<1,000
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	4,000	<1,000	4,000
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1,000	<1,000	<1,000
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1,000	<1,000	<1,000
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	475,000	<1,000	475,000
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	486,000	<1,000	486,000

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Trichloronate	Tetrachlorvinphos	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	2-naphthylamine	Diphenylamine	N-Nitrosodiphenyl & Diphenylamine	Alkalinity (total as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Bicarbonate Alkalinity as CaCO3
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			2	2	2	2	2			4	1,000	1,000	1,000
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	561,000	<1,000	561,000
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	333,000	<1,000	333,000
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	258,000	<1,000	258,000
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	183,000	<1,000	183,000
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	304,000	<1,000	304,000
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	174,000	<1,000	174,000
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	191,000	<1,000	191,000
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	187,000	<1,000	187,000
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	249,000	<1,000	249,000
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	264,000	<1,000	264,000
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	238,000	<1,000	238,000
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	<2	<2	<2	<2	<2	-	-	<4	6,000	<1,000	6,000
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	<2	<2	<2	<2	<2	-	-	<4	11,000	<1,000	11,000
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	<2	<2	<2	<2	<2	-	-	<4	147,000	<1,000	147,000
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	<2	<2	<2	<2	<2	-	-	<4	29,000	<1,000	29,000
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	<2	<2	<2	<2	<2	-	-	<4	15,000	<1,000	15,000
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	149,000	<1,000	94,000
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	35,000	<1,000	35,000
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	66,000	<1,000	66,000
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	44,000	<1,000	44,000
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	8,000	<1,000	8,000
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	69,000	<1,000	69,000
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	40,000	<1,000	40,000
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	<2	<2	<2	<2	<2	-	-	<4	12,000	<1,000	12,000
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	66,000	<1,000	66,000
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	<2	<2	<2	<2	<2	-	-	<4	39,000	<1,000	39,000
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	221,000	<1,000	221,000
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	229,000	<1,000	229,000
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	190,000	<1,000	190,000
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	213,000	<1,000	213,000
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	203,000	<1,000	203,000
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	165,000	<1,000	165,000
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	88,000	<1,000	88,000
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	103,000	<1,000	103,000
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	<2	<2	<2	<2	<2	-	-	<4	92,000	<1,000	92,000
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	<2	<2	<2	<2	<2	-	-	<4	85,000	<1,000	85,000
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	67,000	<1,000	67,000
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	211,000	<1,000	211,000
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	187,000	<1,000	187,000
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	96,000	<1,000	96,000
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	83,000	<1,000	83,000
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	75,000	<1,000	75,000
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	721,000	<1,000	721,000
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	703,000	<1,000	703,000
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	953,000	<1,000	953,000
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	805,000	<1,000	805,000
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	729,000	<1,000	729,000
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	879,000	<1,000	879,000
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	838,000	<1,000	838,000
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	590,000	<1,000	590,000
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	358,000	<1,000	358,000
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	542,000	<1,000	542,000
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	512,000	<1,000	512,000
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	590,000	<1,000	590,000
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	605,000	<1,000	605,000
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	495,000	<1,000	495,000
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	575,000	<1,000	575,000
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	575,000	<1,000	575,000
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	102,000	<1,000	102,000
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	<2	<2	<2	<2	<2	-	-	<4	141,000	<1,000	141,000

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Trichloronate	Tetrachlorvinphos	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	2-naphthylamine	Diphenylamine	N-Nitrosodiphenyl & Diphenylamine	Alkalinity (total as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Bicarbonate Alkalinity as CaCO3
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			2	2	2	2	2			4	1,000	1,000	1,000
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	114,000	<1,000	114,000
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	141,000	<1,000	141,000
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	82,000	<1,000	82,000
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	548,000	<1,000	548,000
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	<2	<2	<2	<2	<2	-	-	<4	542,000	<1,000	542,000
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	113,000	<1,000	113,000
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	95,000	<1,000	68,000
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	48,000	<1,000	48,000
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	42,000	<1,000	42,000
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	1,000	<1,000	1,000
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	2,000	<1,000	2,000
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	<2	<2	<2	<2	<2	-	-	<4	7,000	<1,000	7,000
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	4,000	<1,000	4,000
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	<2	<2	<2	<2	<2	-	-	<4	56,000	<1,000	56,000
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	<2	<2	<2	<2	<2	-	-	<4	32,000	<1,000	32,000
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	<2	<2	<2	<2	<2	-	-	<4	20,000	<1,000	20,000
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	352,000	<1,000	352,000
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	384,000	<1,000	384,000
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	314,000	<1,000	314,000
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	239,000	<1,000	239,000
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	<2	<2	<2	<2	<2	-	-	<4	395,000	<1,000	395,000
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	472,000	<1,000	472,000
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	491,000	<1,000	491,000
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	15,000	<1,000	11,000
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	80,000	<1,000	67,000
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	408,000	<1,000	408,000
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	547,000	<1,000	547,000
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	314,000	<1,000	314,000
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	223,000	<1,000	223,000
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	534,000	<1,000	534,000
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	60,000	<1,000	60,000
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	74,000	<1,000	74,000
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	80,000	<1,000	80,000
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	80,000	<1,000	80,000
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	83,000	<1,000	83,000
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	74,000	<1,000	74,000
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	101,000	<1,000	101,000
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	98,000	<1,000	98,000
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	607,000	<1,000	607,000
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	607,000	<1,000	607,000
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	494,000	<1,000	494,000
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	565,000	<1,000	565,000
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	92,000	<1,000	92,000
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	88,000	<1,000	88,000
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	<2	<2	<2	<2	<2	-	-	<4	2,490,000	<1,000	<1,000
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,290,000	198,000
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	432,000	<1,000	432,000
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	460,000	<1,000	460,000
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	474,000	<1,000	474,000
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	486,000	<1,000	486,000
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	223,000	<1,000	223,000
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	274,000	<1,000	274,000

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Trichloronate	Tetrachlorvinphos	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	2-naphthylamine	Diphenylamine	N-Nitrosodiphenyl & Diphenylamine	Alkalinity (total as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Bicarbonate Alkalinity as CaCO3
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			2	2	2	2	2			4	1,000	1,000	1,000
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	173,000	<1,000	173,000
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	88,000	<1,000	88,000
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	105,000	<1,000	105,000
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	99,000	<1,000	99,000
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	715,000	-	715,000
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	702,000	<1,000	702,000
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	620,000	<1,000	620,000
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	580,000	<1,000	580,000
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	498,000	<1,000	498,000
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	1,240,000	<1,000	1,240,000
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	1,150,000	<1,000	1,150,000
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	1,170,000	<1,000	1,170,000
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	1,240,000	<1,000	1,240,000
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	302,000	<1,000	302,000
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	279,000	<1,000	279,000
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	246,000	<1,000	246,000
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	659,000	<1,000	659,000
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	658,000	<1,000	658,000
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	678,000	<1,000	678,000
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	593,000	-	593,000
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	130,000	<1,000	130,000
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	122,000	<1,000	122,000
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	502,000	<1,000	502,000
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	443,000	<1,000	443,000
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	450,000	<1,000	450,000
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	440,000	<1,000	440,000
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	713,000	<1,000	713,000
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	720,000	<1,000	720,000
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	701,000	<1,000	701,000
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	687,000	<1,000	687,000
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	87,000	<1,000	81,000
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	180,000	<1,000	180,000
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	276,000	<1,000	276,000
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	210,000	<1,000	210,000
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	520,000	<1,000	520,000
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	541,000	<1,000	541,000
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	558,000	<1,000	558,000
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	585,000	<1,000	585,000
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	-	<2	<2	<2	<2	<2	-	-	<4	678,000	-	678,000
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	649,000	<1,000	649,000
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	816,000	<1,000	816,000
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	746,000	<1,000	746,000
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	734,000	<1,000	734,000
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	754,000	<1,000	754,000
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	147,000	<1,000	147,000
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	65,000	<1,000	65,000
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	132,000	<1,000	132,000
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	59,000	<1,000	59,000
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	7,000	<1,000	7,000
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	5,000	<1,000	5,000
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	6,000	<1,000	6,000
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	3,000	<1,000	3,000
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	9,000	<1,000	9,000
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	791,000	<1,000	791,000
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	270,000	<1,000	270,000
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	339,000	<1,000	339,000
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	197,000	<1,000	197,000
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	1,250,000	1,150,000	<1,000
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,540,000	1,390,000	<1,000
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	437,000	376,000	<1,000
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	128,000	77,000	<1,000

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Trichloronate	Tetrachlorvinphos	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	2-naphthylamine	Diphenylamine	N-Nitrosodiphenyl & Diphenylamine	Alkalinity (total as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Bicarbonate Alkalinity as CaCO3
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			2	2	2	2	2			4	1,000	1,000	1,000
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	306,000	<1,000	306,000
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	320,000	<1,000	320,000
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	303,000	<1,000	303,000
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	789,000	<1,000	789,000
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	872,000	<1,000	872,000
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	822,000	<1,000	822,000
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	830,000	<1,000	830,000
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	962,000	<1,000	962,000
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	103,000	<1,000	103,000
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	123,000	<1,000	123,000
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	144,000	<1,000	138,000
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	<1	<1	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	-	-	<5	<5	-	<5	<5	<5	-	650,000	<20	650,000
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<2	<2	-	-	-	-	-	-	-	-	390,000	<20,000	390,000
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<2	<2	-	-	-	-	-	-	-	-	<20,000	<20,000	<20,000
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<1	<1	-	-	-	-	-	-	-	-	120,000	<20,000	120,000
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<2	<2	-	-	-	-	-	-	-	-	22,000	<20,000	22,000
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	42,000	<1,000	42,000
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	36,000	<1,000	36,000
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<1	<1	-	-	-	-	-	-	-	-	61,000	<20	61,000
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<1	<1	-	-	-	-	-	-	-	-	61,000	<20,000	61,000
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<2	<2	-	-	-	-	-	-	-	-	510,000	<20,000	510,000
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	<1	<1	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<2	<2	-	-	-	-	-	-	-	-	430,000	<20,000	430,000
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	<1	<1	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	16,000	<1,000	16,000
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	<2	<2	<2	<2	<2	-	-	<4	<1,000	<1,000	<1,000
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	<2	<2	<2	<2	<2	-	-	<4	<1,000	<1,000	<1,000
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	<2	<2	<2	<2	<2	-	-	<4	5,000	<1,000	5,000
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	4,000	<1,000	4,000
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	<2	<2	<2	<2	<2	-	-	<4	4,000	<1,000	4,000
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	264,000	<1,000	264,000
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	286,000	-	286,000
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	231,000	<1,000	231,000
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	252,000	<1,000	252,000
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	1,250,000	<1,000	1,250,000
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	862,000	<1,000	862,000
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	1,260,000	<1,000	1,260,000
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	926,000	<1,000	926,000
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	537,000	<1,000	537,000
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	72,000	<1,000	72,000
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	<2	<2	<2	<2	<2	-	-	<4	103,000	<1,000	103,000
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	<2	<2	<2	<2	<2	-	-	<4	1,050,000	<1,000	1,050,000
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	1,310,000	<1,000	1,310,000
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	<2	<2	<2	<2	<2	-	-	<4	1,130,000	<1,000	1,130,000

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Trichloronate	Tetrachlorvinphos	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	2-naphthylamine	Diphenylamine	N-Nitrosodiphenyl & Diphenylamine	Alkalinity (total as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Bicarbonate Alkalinity as CaCO3
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			2	2	2	2	2			4	1,000	1,000	1,000
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	769,000	<1,000	769,000
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	1,080,000	<1,000	1,080,000
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	1,150,000	<1,000	1,150,000
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	658,000	<1,000	658,000
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	159,000	-	159,000
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	73,000	<1,000	73,000
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	980,000
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<2	<2	-	-	-	-	-	-	-	-	980,000	<20,000	980,000
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<1	<1	-	<5	<5	-	<5	<5	<5	-	120,000	<20,000	120,000
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	-	<2	<2	<2	<2	<2	-	-	<4	235,000	<1,000	235,000
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	215,000	<1,000	215,000
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	<2	<2	<2	<2	<2	-	-	<4	6,000	<1,000	6,000
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	<2	<2	<2	<2	<2	-	-	<4	28,000	<1,000	28,000
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<2	<2	-	<2	<2	-	<2	<2	<2	-	240,000	<20,000	240,000
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<1	<1	-	-	-	-	-	-	-	-	330,000	<20,000	330,000
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	<2	<2	<2	<2	<2	-	-	<4	54,000	<1,000	54,000
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	53,000	<1,000	53,000
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	28,000	<1,000	28,000
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	18,000	<1,000	18,000
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	10,000	<1,000	10,000

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			inity										Anilines						Biological		Carbamates	Dio
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Hardness as CaCO3 (filtered)	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Sulphate Reducing Bacteria Population Estimate	Sulphate Reducing Bacteria Population Estimate	Methiocarb	234678-HxCDF I-TEF
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	CFU/mL	pac/mL	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1,000			4	4	2	2	2	2				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2										250				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<10	9,100,000	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	<10	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Hardness as CaCO3 (filtered)	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Sulphate Reducing Bacteria Population Estimate	Sulphate Reducing Bacteria Population Estimate	Methiocarb	234678-HxCDF I-TEF
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	CFU/mL	pac/mL	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1,000			4	4	2	2	2	2				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2										250				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	55,000	-	-	<4	<4	<2	<2	<2	2	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Hardness as CaCO3 (filtered)	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Sulphate Reducing Bacteria Population Estimate	Sulphate Reducing Bacteria Population Estimate	Methiocarb	234678-HxCDF I-TEF
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	CFU/mL	pac/mL	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1,000			4	4	2	2	2	2				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2										250				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	27,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	4,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	13,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	<1,000	5,850,000	-	-	-	-	-	-	-	6,000	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	<1,000	5,180,000	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	<1,000	1,304,000	-	-	-	-	-	-	-	500,000	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	<1,000	1,510,000	-	-	-	-	-	-	-	-	20	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	<1,000	364,000	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	<1,000	365,000	-	-	-	-	-	-	-	1,400	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	<1,000	364,000	-	-	-	-	-	-	-	115,000	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	<1,000	393,000	-	-	-	-	-	-	-	-	115,000	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	<1,000	3,650,000	-	-	-	-	-	-	-	6,000	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	<1,000	3,640,000	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	<1,000	464,000	-	-	-	-	-	-	-	-	115,000	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	198,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	2,290,000	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	<1,000	4,020,000	-	-	-	-	-	-	-	-	6,000	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	<1,000	3,810,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	<1,000	3,740,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	<1,000	3,520,000	-	-	-	-	-	-	-	-	500,000	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	<1,000	1,340,000	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	<1,000	1,310,000	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Hardness as CaCO3 (filtered)	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Sulphate Reducing Bacteria Population Estimate	Sulphate Reducing Bacteria Population Estimate	Methiocarb	234678-HxCDF I-TEF
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	CFU/mL	pac/mL	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1,000			4	4	2	2	2	2				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2										250				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	<1,000	1,380,000	-	-	-	-	-	-	-	-	1	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	<1,000	1,440,000	-	-	-	-	-	-	-	-	1	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	<1,000	1,310,000	-	-	-	-	-	-	-	-	1	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	<1,000	1,220,000	-	-	-	-	-	-	-	-	20	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	3,580,000	-	-	-	-	-	-	-	-	115,000	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	<1,000	3,470,000	-	-	-	-	-	-	-	-	115,000	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	<1,000	2,900,000	-	-	-	-	-	-	-	-	27,000	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	<1,000	2,560,000	-	-	-	-	-	-	-	-	27,000	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	<1,000	2,120,000	-	-	-	-	-	-	-	-	1,400	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	<1,000	1,420,000	-	-	-	-	-	-	-	-	115,000	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	<1,000	1,310,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	<1,000	1,390,000	-	-	-	-	-	-	-	-	115,000	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	<1,000	1,480,000	-	-	-	-	-	-	-	-	115,000	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	<1,000	196,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	<1,000	191,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	<1,000	143,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	<1,000	2,880,000	-	-	-	-	-	-	-	-	115,000	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	<1,000	2,660,000	-	-	-	-	-	-	-	-	500,000	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	<1,000	2,240,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	2,790,000	-	-	-	-	-	-	-	-	6,000	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	<1,000	962,000	-	-	-	-	-	-	-	-	6,000	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	<1,000	932,000	-	-	-	-	-	-	-	-	1,400	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	<1,000	904,000	-	-	-	-	-	-	-	-	6,000	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	<1,000	1,120,000	-	-	-	-	-	-	-	-	1,400	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	<1,000	2,120,000	-	-	-	-	-	-	-	-	115,000	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	<1,000	2,400,000	-	-	-	-	-	-	-	-	115,000	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	<1,000	2,510,000	-	-	-	-	-	-	-	-	115,000	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	<1,000	2,500,000	-	-	-	-	-	-	-	-	6,000	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	6,000	104,000	-	-	-	-	-	-	-	-	325	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	<1,000	80,000	-	-	-	-	-	-	-	-	1,400	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	<1,000	155,000	-	-	-	-	-	-	-	-	1,400	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	<1,000	282,000	-	-	-	-	-	-	-	-	330	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	<1,000	3,830,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	<1,000	3,670,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	<1,000	3,700,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	<1,000	4,170,000	-	-	-	-	-	-	-	-	1,400	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	3,880,000	-	<4	<4	<2	<2	<2	<2	-	500,000	-	-
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	<1,000	3,950,000	-	-	-	-	-	-	-	-	115,000	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	<1,000	4,020,000	-	-	-	-	-	-	-	-	27,000	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	<1,000	3,600,000	-	-	-	-	-	-	-	-	115,000	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	<1,000	3,720,000	-	-	-	-	-	-	-	-	27,000	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	<1,000	3,990,000	-	-	-	-	-	-	-	-	27,000	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	<1,000	5,510,000	-	-	-	-	-	-	-	-	27,000	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	<1,000	5,470,000	-	-	-	-	-	-	-	-	6,000	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	<1,000	5,020,000	-	-	-	-	-	-	-	-	6,000	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	<1,000	4,540,000	-	-	-	-	-	-	-	-	50	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	<1,000	4,930,000	-	-	-	-	-	-	-	-	1	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	<1,000	4,450,000	-	-	-	-	-	-	-	-	1	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	<1,000	4,640,000	-	-	-	-	-	-	-	-	1	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	<1,000	4,300,000	-	-	-	-	-	-	-	-	1	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	<1,000	5,110,000	-	-	-	-	-	-	-	-	1	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	<1,000	5,710,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	<1,000	1,730,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	<1,000	1,480,000	-	-	-	-	-	-	-	-	115,000	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	<1,000	727,000	-	-	-	-	-	-	-	-	1,400	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	101,000	1,680,000	-	-	-	-	-	-	-	-	1	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	149,000	2,270,000	-	-	-	-	-	-	-	-	1	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	62,000	1,600,000	-	-	-	-	-	-	-	-	5	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	51,000	3,750,000	-	-	-	-	-	-	-	-	27,000	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Hardness as CaCO3 (filtered)	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Sulphate Reducing Bacteria Population Estimate	Sulphate Reducing Bacteria Population Estimate	Methiocarb	234678-HxCDF I-TEF
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	CFU/mL	pac/mL	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1,000			4	4	2	2	2	2				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2										250				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	<1,000	-	-	-	-	-	-	-	-	-	115,000	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	<1,000	2,820,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	<1,000	2,820,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	<1,000	2,650,000	-	-	-	-	-	-	-	-	27,000	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	<1,000	3,160,000	-	-	-	-	-	-	-	-	3,300	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	<1,000	40,000	-	-	-	-	-	-	-	-	6,000	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	<1,000	535,000	-	-	-	-	-	-	-	-	27,000	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	6,000	187,000	-	-	-	-	-	-	-	-	27,000	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	>110	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	>110	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<10	2,500,000	-	<5	-	-	-	-	<5	-	-	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<10,000	5,000,000	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<10,000	4,100,000	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<10,000	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<10,000	5,000,000	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<10	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<10,000	-	-	-	-	-	-	-	-	9.3	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<10,000	4,600,000	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<10,000	3,700,000	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	110	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	4,180,000	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	<1,000	4,720,000	-	-	-	-	-	-	-	-	6,000	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	3,590,000	-	-	-	-	-	-	-	-	27,000	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	<1,000	4,310,000	-	-	-	-	-	-	-	-	115,000	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	<1,000	4,760,000	-	-	-	-	-	-	-	-	115,000	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	<1,000	3,840,000	-	-	-	-	-	-	-	-	115,000	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	<1,000	3,610,000	-	-	-	-	-	-	-	-	500,000	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	<1,000	3,930,000	-	-	-	-	-	-	-	-	500,000	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	<1,000	5,010,000	-	-	-	-	-	-	-	-	115,000	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	<1,000	3,440,000	-	-	-	-	-	-	-	-	27,000	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Hardness as CaCO3 (filtered)	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Sulphate Reducing Bacteria Population Estimate	Sulphate Reducing Bacteria Population Estimate	Methiocarb	234678-HxCDF I-TEF
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	CFU/mL	pac/mL	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1,000			4	4	2	2	2	2				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2										250				
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	<1,000	2,690,000	-	-	-	-	-	-	-	-	115,000	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	<1,000	4,550,000	-	-	-	-	-	-	-	-	115,000	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	<1,000	4,400,000	-	-	-	-	-	-	-	-	500,000	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	<1,000	3,350,000	-	-	-	-	-	-	-	-	27,000	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<10,000	3,600,000	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<10,000	-	-	<5	-	-	-	-	<5	-	-	-	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<1,000	6,090,000	-	<4	<4	<2	<2	<2	<2	-	27,000	-	-
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	<1,000	5,760,000	-	-	-	-	-	-	-	-	325	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<10,000	-	-	<4	-	-	-	-	<2	-	-	-	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<10,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<1,000	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

														Field							EP068A: OC Pesticides	N
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3,4,6,7,8-Heptachlorodibenzofuran	Electrical Conductivity (Non Compensated)	Depth to Water	DO (Field)	Redox Potential (Field)	Temp (Field)	ORP	TDS (Field)	Depth to groundwater (measured)	pH (Field)	PURGE VOLUME	Sum of DDD + DDE + DDT	Ammonium as N
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µS/cm	mbTOC	µg/L	mV	oC	CFU/mV	µg/L	m	-	L	mg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1													
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																			<5.5			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											7000								6.5 - 8.0			
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	3,015	-	2,800	149.8	19.6	-	-	2.501	7.87	-	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	7,685	-	0	-27.3	23.2	-	-	2.54	7.19	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	21,129	-	3,400	166.9	19.8	-	-	2.701	6.73	-	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	18,021	-	5,650	-35.2	20.9	-	-	2.88	6.4	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	1.256	-	-	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	1,702	-	1,030	43.5	20.4	-	-	1.256	7.27	-	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	1,093	-	1,410	35.9	19.3	-	-	1.256	7.25	-	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	1,274	-	2,340	5.2	24.5	-	-	2.559	6.37	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	1,279	-	2,460	5	24.5	-	-	2.559	6.37	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	1,274	-	2,620	5	24.4	-	-	2.559	6.37	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	3,740	-	2,040	102.4	27.5	-	-	1.54	5.84	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	2,302	-	3,840	110.7	25.4	-	-	1.54	5.78	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	3,935	-	410	85.5	27.6	-	-	1.54	5.63	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	3,414	-	2,160	301.2	21.2	-	-	2.105	4.96	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	2,216.50	-	2,550	255.2	21.4	-	-	2.105	4.91	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	2,008.50	-	2,060	210.9	21.7	-	-	2.105	4.74	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	3,821	-	1,540	87.7	21	-	-	1.519	6.32	-	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	2,437.50	-	2,110	149.8	24.2	-	-	1.54	5.41	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	1,458	-	2,380	-68.7	24.2	-	-	1.505	5.78	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	34,383	-	2,020	160.3	23.4	-	-	4.233	3.95	-	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	31,542	-	1,980	152.8	24.1	-	-	4.236	3.9	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	34,032	-	1,820	249.6	22.2	-	-	4.076	4.38	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	34,032	-	1,820	249.6	22.2	-	-	4.076	4.38	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	701	-	540	-72.6	20.8	-	-	1.955	8.64	-	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	1,002	-	2,090	144.7	20.7	-	-	1.985	6.59	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	201.4	-	2,750	33.4	21.2	-	-	1.872	6.48	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	30,508	-	1,110	134.2	20.4	-	-	6.215	5.56	-	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	4,611	-	13,710	110.3	21.2	-	-	6.425	4.81	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	33,045	-	1,160	-42.5	22.4	-	-	5.735	6.27	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	9,975	-	4,330	181.3	21.2	-	-	3.145	5.02	-	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	9,214	-	3,210	189.6	22	-	-	3.045	3.87	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	9,460	-	2,220	-35.6	23.7	-	-	3.249	4.67	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	17,720	-	2,440	116	25.1	-	-	6.635	6.54	-	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	17,257	-	6,420	259.9	22.3	-	-	6.935	6.43	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3,4,6,7,8-Heptachlorodibenzofuran	Electrical Conductivity (Non Compensated)	Depth to Water	DO (Field)	Redox Potential (Field)	Temp (Field)	ORP	TDS (Field)	Depth to groundwater (measured)	pH (Field)	PURGE VOLUME	Sum of DDD + DDE + DDT	Ammonium as N
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µS/cm	mbTOC	µg/L	mV	oC	CFU/mV	µg/L	m	-	L	mg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1													
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																			<5.5			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											7000								6.5 - 8.0			
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	1,608	-	2,190	-126.5	23.9	-	-	7.177	6.87	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	13,574	-	1,750	49.1	21.6	-	-	2.275	5.9	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	16,051	-	810	-95.4	21.6	-	-	2.352	5.75	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	13,245	-	900	5	20.2	-	-	2.401	5.96	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	20,710	-	1,970	-90.5	20	-	-	2.401	5.95	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	16,069	-	1,270	41.2	23	-	-	2.34	5.83	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	20,336	-	2,800	33.8	22.4	-	-	2.31	5.84	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	21,660	-	880	12.9	21.9	-	-	2.455	5.79	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	14,259	-	1,320	56.7	25.3	-	-	2.315	5.78	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	18,344	-	2,250	39.5	24.2	-	-	2.325	5.82	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	20,743	-	920	61.2	23.8	-	-	2.476	5.73	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	10,400	-	2,450	-54.5	22.7	-	-	1.385	5.95	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	10,400	-	2,450	-54.5	22.7	-	-	1.385	5.95	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	10,400	-	2,450	-54.5	22.7	-	-	1.385	5.95	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	292.3	-	4,720	235.1	22.2	-	-	2.785	5.1	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	292.3	-	4,720	235.1	22.2	-	-	2.785	5.1	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	292.3	-	4,720	235.1	22.2	-	-	2.785	5.1	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	22,576	-	4,300	90.4	20.6	-	-	2.505	4.8	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	22,576	-	4,300	90.4	20.6	-	-	2.505	4.8	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	22,576	-	4,300	90.4	20.6	-	-	2.505	4.8	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	25,335	-	1,980	172.7	20	-	-	1.615	5.53	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	25,335	-	1,980	172.7	20	-	-	1.615	5.53	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	10,204	-	3,850	144.6	25.8	-	-	1.425	5.9	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	10,204	-	3,850	144.6	25.8	-	-	1.425	5.9	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	22,411	-	1,700	-147.7	19.6	-	-	3.889	7.04	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	28,031	-	1,760	-77.6	20.6	-	-	3.889	6.86	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	30,293	-	1,760	-77.6	20.5	-	-	3.889	6.74	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	20,903	-	1,090	-115.9	22.2	-	-	3.941	6.16	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	20,903	-	1,090	-115.9	22.2	-	-	3.941	6.16	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	20,915	-	1,390	-116.1	22.3	-	-	3.941	6.16	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3,4,6,7,8-Heptachlorodibenzofuran	Electrical Conductivity (Non Compensated)	Depth to Water	DO (Field)	Redox Potential (Field)	Temp (Field)	ORP	TDS (Field)	Depth to groundwater (measured)	pH (Field)	PURGE VOLUME	Sum of DDD + DDE + DDT	Ammonium as N
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µS/cm	mbTOC	µg/L	mV	oC	CFU/mV	µL	m	-	L	mg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1													
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																			<5.5			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											7000								6.5 - 8.0			
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	11,654	-	1,090	-75.4	24.4	-	-	4.235	5.84	-	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	11,238	-	1,480	-60.4	25.6	-	-	4.294	6.11	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	26,638	-	3,560	-20.1	19.8	-	-	7.186	7.9	-	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	24,475	-	750	92.8	22.1	-	-	7.257	7.3	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	4,076	-	0	-28.3	23.4	-	-	7.221	6.95	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	2,338	-	3,620	103.5	21.5	-	-	7.185	6.43	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	2,338	-	3,620	103.5	21.5	-	-	7.185	6.43	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	11,932	-	2,200	141.8	20.7	-	-	1.935	5.45	-	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	10,668	-	2,240	203.3	30.5	-	-	1.986	5.56	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	12,006	-	3,130	162.3	18.3	-	-	2.225	5	-	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	12,263	-	2,580	146.7	26.4	-	-	2.375	4.32	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	9,193	-	4,790	176.76	24.6	-	-	2.532	5.08	-	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	9,444	-	5,760	141.2	19.7	-	-	2.475	4.73	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	20,511	-	1,610	185.4	21.9	-	-	5.776	4.8	-	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	37,141	-	7,830	191.5	21.7	-	-	5.835	4.8	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	10,729	-	880	149.3	21.2	-	-	6.046	6.47	-	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	11,708	-	660	-53.9	25.7	-	-	6.112	6.08	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	29,000	-	-	-	-	-	-	-	7.38	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	23,800	-	-	-	-	-	-	-	7.42	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	13,000	-	-	-	-	-	-	-	6.76	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	27,200	-	-	-	-	-	-	-	7.08	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	2,430	-	-	-	-	-	-	-	6.18	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	2,420	-	-	-	-	-	-	-	6.62	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	2,430	-	-	-	-	-	-	-	6.18	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	3,450	-	-	-	-	-	-	-	6.45	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	23,000	-	-	-	-	-	-	-	7.39	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	23,800	-	-	-	-	-	-	-	7.29	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	1,580	-	-	-	-	-	-	-	6.8	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	13,000	-	-	-	-	-	-	-	6.76	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3,4,6,7,8-Heptachlorodibenzofuran	Electrical Conductivity (Non Compensated)	Depth to Water	DO (Field)	Redox Potential (Field)	Temp (Field)	ORP	TDS (Field)	Depth to groundwater (measured)	pH (Field)	PURGE VOLUME	Sum of DDD + DDE + DDT	Ammonium as N
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µS/cm	mbTOC	µg/L	mV	oC	CFU/mV	µg/L	m	-	L	mg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1													
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																			<5.5			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											7000								6.5 - 8.0			
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	1,716	-	2,760	94.2	18.5	-	-	0.896	8.11	-	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	621	-	930	-35.8	23.1	-	-	0.875	7.26	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3,4,6,7,8-Heptachlorodibenzofuran	Electrical Conductivity (Non Compensated)	Depth to Water	DO (Field)	Redox Potential (Field)	Temp (Field)	ORP	TDS (Field)	Depth to groundwater (measured)	pH (Field)	PURGE VOLUME	Sum of DDD + DDE + DDT	Ammonium as N
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µS/cm	mbTOC	µg/L	mV	oC	CFU/mV	µg/L	m	-	L	mg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1													
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																			<5.5			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											7000								6.5 - 8.0			
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	1,317	-	180	-59.9	20.3	-	-	4.61	7.46	-	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	1,327	-	2,490	96.9	20.8	-	-	4.615	6.7	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	1,853	-	1,120	102.8	22.9	-	-	4.643	6.72	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	-	-	-	-	-	-	9,400,000	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	-	-	-	18,000,000	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	-	-	-	-	19,000,000	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-	-	-	14,000,000	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	-	-	-	-	16,000,000	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	21,290	-	4,240	122.7	19.4	-	-	2.26	5.25	-	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	23,655	-	1,090	-10.6	27	-	-	2.198	4.73	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	-	-	-	-	20,000,000	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	-	-	-	-	-	12,000,000	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	-	-	-	10,000,000	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	590
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	550
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	28,377	-	1,000	178.5	23	-	-	3.694	4.34	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	25,868	-	1,020	155.2	22.5	-	-	3.628	4.58	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	1,475	-	1,610	-128.5	23.5	-	-	2.045	6.38	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	27,774	-	1,640	-49.6	22.6	-	-	6.421	6.91	-	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	24,304	-	160	-219.4	18.8	-	-	5.804	6.79	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	2,493	-	3,820	-15.5	25.6	-	-	4.112	7.05	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3,4,6,7,8-Heptachlorodibenzofuran	Electrical Conductivity (Non Compensated)	Depth to Water	DO (Field)	Redox Potential (Field)	Temp (Field)	ORP	TDS (Field)	Depth to groundwater (measured)	pH (Field)	PURGE VOLUME	Sum of DDD + DDE + DDT	Ammonium as N
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µS/cm	mbTOC	µg/L	mV	oC	CFU/mV	µg/L	m	-	L	mg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1													
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																			<5.5			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672											7000								6.5 - 8.0			
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	-	-	-	-	-	13,000,000	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	-	-	-	-	-	-	22,000,000	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	23,034	-	2,350	206.7	23	-	-	3.189	4.03	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	-	-	-	-	-	6,400,000	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	9,038	-	2,190	145.7	20.5	-	-	1.9	5.97	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	9,048	-	1,350	173.5	19.9	-	-	1.9	5.89	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	9,887	-	3,800	139.6	25.8	-	-	2.897	4.74	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	9,886	-	3,810	139.7	25.4	-	-	2.897	4.74	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	9,886	-	3,810	138.7	25	-	-	2.897	4.74	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			A								Ions										Organic	Soluble Metals by ICPAES
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Sulfate as SO4 - Turbidimetric (filtered)	Calcium	Calcium (filtered)	Chloride	Potassium	Potassium (filtered)	Sodium	Sodium (filtered)	Ionic Balance	Anions Total	Cations Total	Methane	Iron (soluble)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	meq/L	meq/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	1	1	1	1	1	0.01	0.01	0.01	10	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation													6,000									
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	14,000	-	-	6,800	-	-	-	-	<50	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	7,900	56	-	7,400	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	59	904	-	11	-	523	4.61	34.8	31.7	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	104	2,360	-	11	-	1,170	9.11	84.6	70.5	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	46	6,740	-	4	-	3,560	3.07	210	197	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	41	6,820	-	4	-	3,560	3.76	210	195	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	37	720	-	5	-	368	4.73	22.4	20.4	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	43	655	-	6	-	310	5.14	20.4	18.4	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	44	5,730	-	3	-	2,700	7.4	170	147	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	4	828	-	1	-	489	3.89	25	23.1	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	10	1,990	-	1	-	1,190	1.61	58.4	60.3	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	16	2,360	-	2	-	1,370	2.17	72	68.9	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	16	2,320	-	2	-	1,380	0.96	70.8	69.4	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	69	168	-	6	-	168	6.68	11.3	13	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	62	114	-	6	-	164	2.22	11.8	12.4	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	59	99	-	6	-	166	2.94	13	12.3	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	29	129	-	4	-	203	6.3	10.6	12	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	30	107	-	5	-	159	1.72	9.86	9.53	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	23	116	-	5	-	178	0.61	10.2	10.1	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	20	172	-	3	-	200	5.5	11.9	10.7	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	27	167	-	5	-	202	0.93	11.2	11.4	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	28	167	-	5	-	198	0.33	11.4	11.4	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	23	1,580	-	6	-	1,090	0.55	55	54.4	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	30	1,910	-	6	-	1,200	4.39	65.6	60.1	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	24	1,560	-	7	-	1,080	0.1	54.2	54.1	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	9	1,130	-	2	-	771	4.1	40.2	37	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	8	922	-	2	-	672	1.69	34.1	33	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	14	1,140	-	3	-	863	2.06	40.1	41.8	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	10	1,130	-	2	-	772	2.54	39.3	37.3	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	3	1,130	-	1	-	704	0.13	33.5	33.4	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	10	926	-	2	-	792	3.94	35.4	38.3	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	17	840	-	3	-	658	7.66	38.8	33.3	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	15	991	-	2	-	808	4.84	44.4	40.3	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	15	559	-	2	-	589	5.54	25.8	28.9	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	68	12,300	-	12	-	5,620	1.3	393	383	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	62	11,300	-	1	-	5,520	1.68	362	375	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	77	11,900	-	11	-	5,500	0.75	382	376	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	22	24	-	7	-	20	-	1.9	2.48	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	20	26	-	6	-	20	-	2.4	2.35	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	3	-	7	4	-	3	-	5	-	0.65	0.64	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	73	10,200	-	26	-	4,870	1.33	298	290	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	69	11,800	-	23	-	5,280	4.19	342	315	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	60	11,500	-	23	-	5,920	2.69	334	352	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	1	3,310	-	3	-	1,710	2.98	97.4	91.8	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	1	3,330	-	3	-	1,560	9.1	98.3	81.9	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	1	3,400	-	3	-	1,580	9.3	100	83.2	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	<1	3,200	-	3	-	1,610	5.68	94.1	84	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	189	6,000	-	43	-	2,500	7.98	191	163	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	243	6,630	-	50	-	2,980	1.78	210	203	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Sulfate as SO4 - Turbidimetric (filtered)	Calcium	Calcium (filtered)	Chloride	Potassium	Potassium (filtered)	Sodium	Sodium (filtered)	Ionic Balance	Anions Total	Cations Total	Methane	Iron (soluble)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	meq/L	meq/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	1	1	1	1	1	0.01	0.01	0.01	10	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation													6,000									
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	271	7,100	-	51	-	3,210	1.68	226	219	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	865	-	158	5,580	-	9	-	3,130	0.71	182	179	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	948	-	121	5,570	-	52	-	2,920	4.66	182	166	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	875	-	94	5,040	-	28	-	2,550	5.92	164	146	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	1,070	-	162	7,240	-	11	-	3,390	7.96	232	198	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	818	-	127	6,660	-	4	-	3,530	1.06	208	204	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	863	-	156	6,640	-	4	-	3,980	5.52	209	234	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	978	-	150	7,410	-	4	-	3,870	1.12	233	228	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	756	-	142	5,660	-	4	-	3,100	0.09	180	180	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	899	-	171	6,160	-	4	-	3,470	1.8	198	205	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	1,010	-	182	7,400	-	4	-	3,560	4.6	234	214	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	144	10,600	-	9	-	4,660	5.52	329	295	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	141	10,600	-	5	-	4,870	3.06	328	309	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	151	7,990	-	27	-	3,800	2.41	250	238	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	160	10,500	-	4	-	4,600	4.78	325	295	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	154	9,960	-	4	-	4,700	2	311	299	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	160	4,570	-	27	-	1,900	9.13	144	120	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	186	11,600	-	3	-	5,300	2.87	360	340	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	58	3,140	-	7	-	1,580	0.8	98.8	100	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	181	11,300	-	4	-	5,300	1.83	351	338	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	148	10,700	-	3	-	4,940	2.74	330	313	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	31	855	-	7	-	372	5.93	27.6	24.5	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	189	12,100	-	3	-	5,570	2.59	374	355	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	1,250	-	139	9,130	-	3	-	4,820	3.96	284	307	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	33	-	25	558	-	5	-	636	37.7	17.7	39.2	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	1,670	-	188	11,800	-	3	-	5,840	0.94	368	375	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	107	8,790	-	7	-	4,150	5.86	266	236	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	152	8,730	-	14	-	3,970	7.16	264	229	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	90	7,750	-	5	-	3,800	4.62	236	215	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	90	8,230	-	6	-	4,080	4.04	250	230	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	62	7,720	-	3	-	4,160	0.59	237	234	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	62	9,450	-	4	-	4,220	9.13	285	237	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	48	7,370	-	3	-	4,110	0.64	225	228	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	52	8,790	-	3	-	4,460	2.78	264	250	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	161	9,320	-	10	-	4,230	5.69	281	250	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	158	9,240	-	9	-	4,190	5.47	276	247	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	128	9,730	-	5	-	4,870	0.58	289	286	<10	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	150	10,300	-	8	-	4,810	4.02	309	285	<10	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	173	9,860	-	10	-	4,600	3.31	297	278	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	137	9,500	-	7	-	4,510	2.96	285	268	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	130	9,120	-	7	-	4,310	3.57	273	254	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	126	9,180	-	19	-	4,460	1.98	274	263	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	91	492	-	16	-	370	6.97	29.1	25.3	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	242	4,280	-	18	-	1,870	5.98	141	125	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	206	3,700	-	19	-	1,850	1.25	125	122	309	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	310	6,240	-	20	-	3,180	2.06	200	208	263	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	444	9,940	-	26	-	4,560	1.71	311	300	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	419	10,100	-	24	-	4,150	7.5	319	274	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	285	6,120	-	20	-	2,780	3.42	197	184	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	436	9,640	-	20	-	4,710	2.13	300	313	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	209	4,840	-	11	-	2,300	1.14	152	149	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	407	9,000	-	18	-	4,590	3.85	280	302	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	437	9,280	-	16	-	4,770	4.33	286	312	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	401	10,200	-	17	-	4,500	3.76	315	292	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	451	10,300	-	18	-	4,690	2.02	318	306	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	369	8,740	-	18	-	4,670	5.58	270	302	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	373	10,700	-	18	-	4,710	3.9	330	305	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	375	10,600	-	18	-	4,760	2.86	326	308	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	48	259	-	16	-	394	1.48	21.9	21.2	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	622	-	47	224	-	17	-	384	3.2	22.1	20.7	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Sulfate as SO4 - Turbidimetric (filtered)	Calcium	Calcium (filtered)	Chloride	Potassium	Potassium (filtered)	Sodium	Sodium (filtered)	Ionic Balance	Anions Total	Cations Total	Methane	Iron (soluble)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	meq/L	meq/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	1	1	1	1	1	0.01	0.01	0.01	10	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation													6,000									
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	675	-	54	201	-	18	-	407	0.39	22	22.2	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	72	2,990	-	6	-	1,430	8.3	94.2	79.8	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	57	2,900	-	5	-	1,530	4.73	90.9	82.7	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	443	8,940	-	36	-	3,900	4.76	269	244	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	427	8,750	-	36	-	4,410	2.02	263	274	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	73	1,110	-	5	-	447	8.88	34.4	28.8	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	56	559	-	4	-	251	4.28	18.4	16.9	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	20	3,720	-	2	-	2,040	4.3	117	107	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	20	3,970	-	2	-	2,070	6.91	124	108	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	3	4,000	-	3	-	2,160	2.56	117	111	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	3	3,990	-	4	-	2,220	1.28	117	114	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	8	4,310	-	5	-	2,090	7.1	126	109	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	10	2,980	-	4	-	2,040	9.08	88	106	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	136	11,900	-	22	-	6,180	5.68	354	396	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	110	12,800	-	16	-	5,880	0.67	378	373	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	113	13,700	-	16	-	6,110	1.96	403	388	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	108	3,030	-	13	-	1,690	4.2	107	98.8	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	149	3,960	-	14	-	2,030	5.06	135	122	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	358	11,500	-	38	-	5,000	0.72	388	383	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	303	10,800	-	35	-	5,220	3.51	358	385	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	432	11,600	-	71	-	5,440	2.92	393	416	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	454	12,200	-	49	-	5,270	0.66	418	413	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	440	11,500	-	44	-	5,410	2.7	396	418	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	109	-	373	5,340	-	32	-	2,430	9.47	153	127	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	219	-	358	5,020	-	31	-	2,770	0.75	148	146	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	628	-	8,920	40	-	3,440	-	3.54	267	249	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	594	-	9,920	35	-	4,160	-	1.98	311	299	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	570	-	7,670	34	-	3,880	-	7.18	237	273	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	124	-	4,200	3	-	2,230	-	4.34	135	124	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	578	-	8,900	35	-	3,960	-	1.42	276	284	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	123	-	3,590	10	-	1,740	-	5.97	120	106	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	32	-	776	1	-	333	-	3.95	23.6	21.8	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	37	-	782	1	-	318	-	5.53	23.9	21.4	54	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	37	-	782	1	-	318	-	5.53	23.9	21.4	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	34	-	754	1	-	321	-	4.18	23.1	21.3	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	32	-	776	1	-	333	-	3.95	23.6	21.8	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	57	-	988	4	-	395	-	1.62	30	29.1	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	52	-	599	8	-	230	-	2.56	19	18.1	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	826	-	-	51	-	3,320	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	826	-	-	51	-	3,320	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	360	-	8,440	27	-	3,870	-	4.47	261	239	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	360	-	8,440	27	-	3,870	-	4.47	261	239	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	366	-	7,840	27	-	3,900	-	1.52	251	243	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	335	-	8,510	25	-	4,230	-	2.54	271	257	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	40	-	390	3	-	210	-	2.52	14.8	14.1	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	49	-	532	4	-	479	-	4.74	18.8	16.4	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	478	-	2,030	94	-	1,650	-	4.34	107	98.1	46	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	640	-	9,500	57	-	4,460	-	0.27	277	276	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,410	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	586	-	8,610	53	-	4,100	-	0.63	253	256	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	610	-	8,550	56	-	4,000	-	0.12	251	250	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	574	-	8,200	56	-	3,800	-	0.84	241	237	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	124	-	4,200	3	-	2,230	-	4.34	135	124	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	100	-	4,220	2	-	2,270	-	4.55	137	125	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Sulfate as SO4 - Turbidimetric (filtered)	Calcium	Calcium (filtered)	Chloride	Potassium	Potassium (filtered)	Sodium	Sodium (filtered)	Ionic Balance	Anions Total	Cations Total	Methane	Iron (soluble)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	meq/L	meq/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	1	1	1	1	1	0.01	0.01	0.01	10	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation													6,000									
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	64	-	5,090	2	-	2,440	-	8.46	158	134	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	53	-	4,870	1	-	2,590	-	2.33	148	141	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	67	-	4,480	1	-	2,370	-	2.86	137	129	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	58	-	4,380	1	-	2,300	-	3.85	134	124	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	493	-	7,630	30	-	3,200	-	4.45	231	211	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	484	-	7,490	28	-	3,110	-	4.94	227	205	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	391	-	5,400	25	-	2,860	-	5	166	183	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	353	-	5,420	22	-	2,410	-	2.78	165	156	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	319	-	4,260	19	-	1,950	-	1.1	130	128	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	287	-	2,460	40	-	1,280	-	5.11	94.2	85	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	267	-	2,520	36	-	1,190	-	8.8	94.1	78.8	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	283	-	1,920	40	-	1,260	-	3.74	77.6	83.6	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	306	-	2,460	42	-	1,280	-	4.39	94.3	86.3	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	19	-	692	1	-	452	-	5.23	26.2	23.6	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	17	-	575	1	-	423	-	0.55	22.5	22.2	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	11	-	581	<1	-	403	-	4.03	22.1	20.4	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	514	-	6,490	44	-	3,100	-	0.69	196	194	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	465	-	6,500	39	-	2,930	-	3.97	196	182	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	406	-	6,200	36	-	2,440	-	10.8	188	152	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	514	-	6,360	42	-	3,030	-	0.67	191	189	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	78	68	-	6	-	25	0.48	5.6	5.54	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	77	76	-	5	-	26	3.12	5.64	6.01	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	62	-	3,800	3	-	2,330	-	1.42	124	121	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	60	-	4,120	3	-	2,210	-	6.83	132	115	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	62	-	3,650	2	-	2,150	-	3.01	118	112	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	72	-	4,090	3	-	2,430	-	1.09	131	128	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	320	-	6,470	30	-	2,420	-	14	197	148	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	346	-	5,860	32	-	2,750	-	3.27	180	168	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	353	-	5,180	34	-	2,920	-	5.16	160	178	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	378	-	5,900	34	-	2,830	-	1.8	180	174	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	35	-	160	9	-	188	-	3.24	11.2	10.5	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	17	-	155	5	-	217	-	1.46	11.5	11.2	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	29	-	284	5	-	258	-	6.53	16.5	14.4	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	95	-	65	10	-	85	-	1.26	9.36	9.6	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	674	-	9,240	49	-	4,230	-	1.79	271	262	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	658	-	9,160	43	-	4,050	-	3.73	270	251	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	655	-	9,810	44	-	4,050	-	7.02	289	251	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	671	-	9,450	48	-	4,470	-	0.02	279	279	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	650	-	8,290	47	-	3,630	-	2.8	250	237	5,010	-
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	670	-	8,790	52	-	4,090	-	1.54	266	258	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	696	-	9,050	46	-	4,480	-	0.12	276	276	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	597	-	7,860	43	-	3,650	-	2.36	243	232	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	590	-	7,950	50	-	3,850	-	<0.01	243	243	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	587	-	7,960	52	-	4,160	-	3.38	245	262	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	394	-	12,400	10	-	5,640	-	1.94	370	356	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	458	-	13,300	10	-	5,520	-	6.41	398	350	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	379	-	12,400	8	-	5,000	-	7.52	370	318	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	228	-	11,800	5	-	5,250	-	4.19	347	319	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	45	-	10,200	6	-	5,220	-	5.03	302	334	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	52	-	10,800	5	-	4,680	-	4.13	318	293	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	44	-	10,800	4	-	4,750	-	2.97	318	299	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	42	-	9,360	4	-	4,680	-	2.6	275	290	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	50	-	9,980	5	-	5,370	-	6.32	296	336	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	374	-	10,400	23	-	4,770	-	1.88	328	316	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	143	-	1,850	11	-	1,700	-	25.5	64.6	109	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	162	-	2,340	11	-	1,380	-	4.71	81.7	89.8	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	136	-	1,130	8	-	504	-	9.08	44	36.6	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	668	-	4,070	71	-	2,350	-	1.29	141	138	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	910	-	5,300	104	-	2,890	-	2.1	181	174	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	639	-	4,780	32	-	2,020	-	8.89	144	120	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	1,500	-	10,000	41	-	4,980	-	0.86	288	293	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Sulfate as SO4 - Turbidimetric (filtered)	Calcium	Calcium (filtered)	Chloride	Potassium	Potassium (filtered)	Sodium	Sodium (filtered)	Ionic Balance	Anions Total	Cations Total	Methane	Iron (soluble)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	meq/L	meq/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	1	1	1	1	1	0.01	0.01	0.01	10	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation													6,000									
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	172	215	-	9	-	112	3.04	15.2	14.3	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	168	250	-	9	-	118	7.37	16.5	14.2	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	158	-	164	223	-	9	-	115	5.54	15.6	14	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	516	-	7,970	50	-	4,180	-	1.85	259	249	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	465	-	7,350	36	-	3,990	-	2.9	245	231	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	467	-	7,180	37	-	4,100	-	2.44	247	236	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	448	-	7,520	35	-	3,700	-	9.05	257	215	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	513	-	7,160	42	-	4,030	-	1.04	244	239	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	8	-	111	16	-	91	-	3.22	5.52	5.18	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	28	-	1,260	14	-	674	-	0.41	40.7	40.4	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	19	-	357	18	-	270	-	7.6	13.7	16	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	<50	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	240	-	10,000	20	-	3,000	-	-	-	-	<50	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	250	-	9,900	17	-	5,700	-	-	-	-	<50	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	15	-	4,200	3.9	-	5,400	-	-	-	-	<50	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	180	-	8,600	9.9	-	4,400	-	-	-	-	<50	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	33	-	3,400	6.5	-	5,700	-	-	-	-	<50	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	24	7,540	-	3	-	4,330	7.88	223	261	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	17	8,720	-	2	-	3,950	5	260	235	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	5,900	4.9	-	6,500	-	-	-	-	<50	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	29	-	5,900	4.9	-	6,500	-	-	-	-	<50	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	510	-	11,000	58	-	4,000	-	-	-	-	<50	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	210	-	9,000	39	-	3,400	-	-	-	-	<50	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	69	10,600	-	16	-	4,880	2.17	309	296	<10	-
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	11,100	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	42	10,200	-	15	-	4,860	0.17	296	297	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	39	9,850	-	12	-	4,640	1.04	288	282	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	44	10,100	-	16	-	4,750	1.5	295	286	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	380	-	30	9,570	-	12	-	3,940	8.17	278	236	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	46	10,300	-	16	-	4,920	0.27	299	301	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	305	-	6,690	20	-	3,050	-	0.13	227	227	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	235	-	5,890	19	-	2,510	-	5.75	204	181	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	255	-	6,810	16	-	2,950	-	3.18	229	215	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	256	-	6,720	17	-	3,270	-	1.88	229	238	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	235	-	7,330	30	-	4,090	-	1.86	246	255	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	308	-	6,400	20	-	3,630	-	4.63	210	230	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	273	-	7,090	27	-	4,050	-	3.02	240	255	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	241	-	8,240	21	-	4,140	-	0.22	279	281	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	170	-	5,920	16	-	2,860	-	0.75	196	194	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	40	459	-	5	-	215	3.41	15.3	14.3	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	85	-	40	754	-	4	-	306	9.61	25.1	20.7	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	428	9,290	-	58	-	4,620	0.53	305	308	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	420	9,530	-	52	-	4,300	4.22	312	287	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	1,190	-	436	9,470	-	55	-	4,700	0.07	314	314	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Sulfate as SO4 - Turbidimetric (filtered)	Calcium	Calcium (filtered)	Chloride	Potassium	Potassium (filtered)	Sodium	Sodium (filtered)	Ionic Balance	Anions Total	Cations Total	Methane	Iron (soluble)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	meq/L	meq/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	1	1	1	1	1	0.01	0.01	0.01	10	
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation													6,000									
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	180	-	5,090	16	-	2,520	-	3.39	175	164	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	303	-	8,170	20	-	4,290	-	0.75	282	278	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	296	-	7,990	17	-	4,090	-	2.7	281	266	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	252	-	5,370	15	-	3,140	-	3.48	190	204	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	41	-	2,910	5	-	1,670	-	1.86	90.7	87.4	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	26	-	1,360	1	-	958	-	1.93	45	46.8	<10	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	270	-	15,000	6.8	-	3,700	-	-	-	-	<50	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	420	-	12,000	11	-	5,000	-	-	-	-	<50	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	96	-	10,800	32	-	4,920	-	4.57	369	336	<10	-
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	95	-	9,210	31	-	4,740	-	0.22	323	322	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	34	6,910	-	23	-	3,800	0.83	241	245	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	2,420	-	34	8,640	-	19	-	3,160	19.2	295	200	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	400	-	9,200	22	-	5,600	-	-	-	-	<50	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	33	-	4,000	4.8	-	1,900	-	-	-	-	<50	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	19	2,900	-	1	-	1,530	5.84	87.4	77.7	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	19	2,870	-	1	-	1,550	4.66	86.5	78.8	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	66	4,070	-	4	-	2,220	1.09	122	120	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	130	3,730	-	7	-	1,860	2.95	111	105	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	89	4,320	-	5	-	2,320	0.97	129	126	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

										Explosives			pH	Physical Parameters								
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	pH (lab)	Electrical Conductivity @ 25C (lab)	Total suspended particulates	Total Dissolved Solids (TDS)	Total Dissolved Solids (TDS) (filtered)	TOC	1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,3-trichlorobenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pH_unit	µS/cm	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	4	4	2	0.01	1		10,000	10,000	1,000				5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		65		550							4	5	7	10
AS2159 – 2009 Piling – Design and Installation													<5.5			35,000,000	35,000,000					
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													6.5 - 8.0									
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	7.6	26,000	-	19,000,000	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	7.5	32,000	-	17,000,000	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<4	<4	<2	7.82	3,230	-	1,920,000	-	2,000	-	-	-	<5
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	7.99	8,040	-	4,850,000	-	3,000	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<4	<4	<2	7.07	19,600	-	12,900,000	-	4,000	-	-	-	<5
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	6.84	19,500	-	13,400,000	-	1,000	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<10
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<10
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<10
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<4	<4	<2	7.19	966	-	808,000	-	6,000	-	-	-	<5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<4	<4	<2	7.44	925	-	564,000	-	7,000	-	-	-	<5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<4	<4	<2	7.19	956	-	608,000	-	8,000	-	-	-	<5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<4	<4	<2	7.62	1,110	-	1,010,000	-	10,000	-	-	-	<5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<4	<4	<2	7.69	1,100	-	844,000	-	10,000	-	-	-	<5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<4	<4	<2	7.81	1,110	-	627,000	-	10,000	-	-	-	<5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<4	<4	<2	6.22	4,110	-	2,390,000	-	5,000	-	-	-	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<4	<4	<2	6.36	3,480	-	2,060,000	-	5,000	-	-	-	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<4	<4	<2	6.37	4,100	-	2,420,000	-	<1,000	-	-	-	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	6.42	3,860	-	2,340,000	-	5,000	-	-	-	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	5.37	3,420	-	1,970,000	-	6,000	-	-	-	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	6.49	3,400	-	2,080,000	-	8,000	-	-	-	<5
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<4	<4	<2	6.41	3,860	-	2,460,000	-	9,000	-	-	-	<5
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	6.68	4,220	-	2,760,000	-	9,000	-	-	-	<5
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	6.14	2,350	-	1,600,000	-	7,000	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<4	<4	<2	4.71	34,100	-	27,700,000	-	11,000	-	-	-	<5
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<4	<4	<2	4.36	32,700	-	23,900,000	-	15,000	-	-	-	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<4	<4	<2	6.12	33,100	-	27,400,000	-	11,000	-	-	-	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<4	<4	<2	7.21	159	-	150,000	-	10,000	-	-	-	<5
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	7.12	240	-	158,000	-	7,000	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<4	<4	<2	7.02	71	-	52,000	-	4,000	-	-	-	<5
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<4	<4	<2	5.88	29,400	-	21,400,000	-	9,000	-	-	-	<5
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	5.1	30,000	-	19,200,000	-	10,000	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	4.49	31,800	-	23,000,000	-	12,000	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<4	<4	<2	5.27	9,390	-	6,220,000	-	12,000	-	-	-	<5
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	4.4	9,330	-	5,590,000	-	12,000	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	4.04	9,350	-	6,170,000	-	12,000	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<4	<4	<2	7.46	16,600	-	11,000,000	-	12,000	-	-	-	<5
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	7.73	18,400	-	13,200,000	-	10,000	-	-	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	pH (lab)	Electrical Conductivity @ 25C (lab)	Total suspended particulates	Total Dissolved Solids (TDS)	Total Dissolved Solids (TDS) (filtered)	TOC	1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,3-trichlorobenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pH_unit	µS/cm	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	4	4	2	0.01	1		10,000	10,000	1,000				5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		65		550							4	5	7	10
AS2159 – 2009 Piling – Design and Installation													<5.5			35,000,000	35,000,000					
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													6.5 - 8.0									
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	7.34	21,300	-	16,900,000	-	8,000	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<4	<4	<2	6.97	17,600	-	12,200,000	-	8,000	-	-	-	<5
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<4	<4	<2	6.52	18,000	-	11,200,000	-	10,000	-	-	-	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<4	<4	<2	6.66	15,800	-	10,600,000	-	20,000	-	-	-	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<4	<4	<2	6.7	21,900	-	14,600,000	-	7,000	-	-	-	<5
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<4	<4	<2	6.79	20,000	-	15,100,000	-	8,000	-	-	-	<5
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<4	<4	<2	6.48	20,400	-	13,500,000	-	9,000	-	-	-	<5
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<4	<4	<2	6.51	22,300	-	15,400,000	-	5,000	-	-	-	<5
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<4	<4	<2	7.13	17,900	-	12,700,000	-	6,000	-	-	-	<5
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<4	<4	<2	6.68	19,600	-	12,800,000	-	8,000	-	-	-	<5
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<4	<4	<2	6.62	22,200	-	16,200,000	-	5,000	-	-	-	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<4	<4	<2	5.5	32,900	-	29,000,000	-	12,000	-	-	-	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<4	<4	<2	6.77	8,100	-	4,460,000	-	12,000	-	-	-	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<4	<4	<2	5.6	32,400	-	27,100,000	-	3,000	-	-	-	<5
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	5.47	27,200	-	21,500,000	-	5,000	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	7.21	2,500	-	1,910,000	-	8,000	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	5.88	31,100	-	27,000,000	-	3,000	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<4	<4	<2	5.69	25,500	-	21,000,000	-	6,000	-	-	-	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<4	<4	<2	7.6	1,560	-	1,110,000	-	4,000	-	-	-	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<4	<4	<2	6.07	32,800	-	26,300,000	-	5,000	-	-	-	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<4	<4	<2	6.87	21,000	-	17,800,000	-	8,000	-	-	-	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<4	<4	<2	6.84	25,000	-	19,100,000	-	6,000	-	-	-	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<4	<4	<2	6.85	20,800	-	13,600,000	-	8,000	-	-	-	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	6.86	24,100	-	15,300,000	-	8,000	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<50
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<4	<4	<2	-	-	-	-	-	2,000	-	-	-	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<4	<4	<2	-	-	-	-	-	2,000	-	-	-	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<4	<4	<2	-	-	-	-	-	6,000	-	-	-	<20
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<4	<4	<2	-	-	-	-	-	4,000	-	-	-	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<4	<4	<2	-	-	-	-	-	7,000	-	-	-	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<4	<4	<2	-	-	-	-	-	6,000	-	-	-	<50
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<10
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<10
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<4	<4	<2	-	-	-	-	-	10,000	-	-	-	<5
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<4	<4	<2	-	-	-	-	-	5,000	-	-	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	11,000	-	-	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	<1,000	-	-	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<4	<4	<2	-	-	-	-	-	18,000	-	-	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<4	<4	<2	7.33	26,200	-	18,600,000	-	7,000	-	-	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<4	<4	<2	7.26	28,900	-	21,000,000	-	<1,000	-	-	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<4	<4	<2	7.36	28,900	-	21,200,000	-	8,000	-	-	-	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<4	<4	<2	7.7	24,300	-	16,700,000	-	4,000	-	-	-	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<4	<4	<2	7.73	29,300	-	19,100,000	-	5,000	-	-	-	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<4	<4	<2	7.68	28,400	-	19,200,000	-	7,000	-	-	-	<5
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<4	<4	<2	7.82	2,310	-	1,580,000	-	27,000	-	-	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	pH (lab)	Electrical Conductivity @ 25C (lab)	Total suspended particulates	Total Dissolved Solids (TDS)	Total Dissolved Solids (TDS) (filtered)	TOC	1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,3-trichlorobenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pH_unit	µS/cm	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	4	4	2	0.01	1		10,000	10,000	1,000				5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		65		550							4	5	7	10
AS2159 – 2009 Piling – Design and Installation													<5.5			35,000,000	35,000,000					
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													6.5 - 8.0									
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<4	<4	<2	7.76	2,000	-	1,540,000	-	28,000	-	-	-	<5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<4	<4	<2	6.3	8,100	-	5,490,000	-	21,000	-	-	-	<5
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	6.37	8,840	-	5,500,000	-	10,000	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<4	<4	<2	7.78	25,100	-	17,800,000	-	4,000	-	-	-	<5
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<4	<4	<2	7.87	25,500	-	17,800,000	-	6,000	-	-	-	<5
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	7.67	3,350	-	2,420,000	-	4,000	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<4	<4	<2	8.51	1,840	-	1,430,000	-	5,000	-	-	-	<5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<4	<4	<2	6.18	11,500	-	7,410,000	-	15,000	-	-	-	<5
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	6.97	11,500	-	7,120,000	-	13,000	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<4	<4	<2	4.97	12,400	-	8,220,000	-	12,000	-	-	-	<5
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	5.24	11,900	-	8,550,000	-	12,000	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<4	<4	<2	5.83	12,300	-	7,130,000	-	11,000	-	-	-	<5
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	5.55	8,400	-	5,120,000	-	13,000	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<4	<4	<2	6.48	36,800	-	26,600,000	-	2,000	-	-	-	<5
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<4	<4	<2	6.53	37,000	-	25,800,000	-	2,000	-	-	-	<5
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<4	<4	<2	7.93	10,100	-	6,290,000	-	6,000	-	-	-	<5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<4	<4	<2	7.94	11,900	-	7,640,000	-	2,000	-	-	-	<5
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<4	<4	<2	8.37	13,900	-	8,920,000	-	9,000	-	-	-	<5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<4	<4	<2	9.14	15,500	-	9,680,000	-	8,000	-	-	-	<5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	19,500,000	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	15,500,000	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	8,310,000	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	20,700,000	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	6.62	12,100	-	8,170,000	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	1,550,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	1,430,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	1,550,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	2,310,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	6.95	2,250	-	1,440,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	14,700,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	17,300,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	875,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	7.11	1,760	-	1,060,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	7.61	24,700	-	16,100,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	7.34	18,700	-	17,200,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	7.38	25,400	-	19,100,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	7.55	25,700	-	18,900,000	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	8,310,000	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	6.55	13,200	-	6,830,000	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	pH (lab)	Electrical Conductivity @ 25C (lab)	Total suspended particulates	Total Dissolved Solids (TDS)	Total Dissolved Solids (TDS) (filtered)	TOC	1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,3-trichlorobenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pH_unit	µS/cm	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	4	4	2	0.01	1		10,000	10,000	1,000				5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		65		550							4	5	7	10
AS2159 – 2009 Piling – Design and Installation													<5.5			35,000,000	35,000,000					
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													6.5 - 8.0									
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	6.19	11,900	-	7,830,000	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	6.33	14,800	-	9,420,000	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	6.48	14,300	-	9,230,000	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	6.24	13,900	-	8,790,000	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	7.24	20,400	-	13,600,000	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	7.14	18,000	-	12,800,000	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	7.33	15,800	-	11,400,000	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	7.3	13,200	-	10,000,000	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	13,100	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	7.23	8,220	-	4,820,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	6.76	7,340	-	4,900,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	7.09	7,350	-	4,860,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	7.06	8,500	-	5,200,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	7.43	2,550	-	1,370,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	6.99	2,240	-	1,280,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	6.93	2,140	-	1,250,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	7.47	17,700	-	12,000,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	7.14	16,000	-	11,300,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	7.38	15,000	-	12,800,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	7.42	18,200	-	11,900,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<4	<4	<2	7.72	526	-	367,000	-	11,000	-	-	-	<5
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	7.84	576	-	370,000	-	10,000	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	7.57	12,600	-	7,040,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	7.1	10,700	-	6,750,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	7.66	12,200	-	7,540,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	7.51	13,400	-	8,250,000	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	7.48	17,200	-	11,100,000	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	7.49	13,400	-	11,100,000	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	7.51	13,900	-	10,800,000	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	7.57	17,600	-	12,200,000	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	8.51	1,120	-	671,000	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	8	1,070	-	677,000	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	7.77	1,420	-	821,000	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	7.61	876	-	638,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	7.57	20,700	-	19,500,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	7.6	24,400	-	16,300,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	7.85	20,800	-	17,300,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	7.6	26,700	-	18,800,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<4	<4	<2	7.39	25,700	-	16,100,000	-	-	-	-	-	<5
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	7.35	20,100	-	18,700,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	7.62	23,800	-	16,200,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	7.5	16,900	-	16,400,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	7.51	25,500	-	18,600,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	7.5	24,100	-	18,800,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	6.58	32,700	-	23,900,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	5.78	28,800	-	21,400,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	6.34	20,900	-	22,400,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	6.01	32,400	-	20,800,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	5.2	31,900	-	19,800,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	4.92	26,200	-	17,900,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	5.11	30,100	-	21,700,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	4.95	27,000	-	19,400,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	5.44	28,600	-	19,300,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	7.42	23,700	-	21,300,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	7.7	7,730	-	4,600,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	7.89	6,240	-	4,110,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	7.36	4,200	-	2,880,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	12	15,900	-	8,030,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	12.2	19,000	-	11,100,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	11.6	13,100	-	8,530,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	10.9	29,100	-	23,700,000	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	pH (lab)	Electrical Conductivity @ 25C (lab)	Total suspended particulates	Total Dissolved Solids (TDS)	Total Dissolved Solids (TDS) (filtered)	TOC	1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,3-trichlorobenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pH_unit	µS/cm	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	4	4	2	0.01	1		10,000	10,000	1,000				5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		65		550							4	5	7	10
AS2159 – 2009 Piling – Design and Installation													<5.5			35,000,000	35,000,000					
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													6.5 - 8.0									
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<4	<4	<2	7.57	1,380	-	876,000	-	13,000	-	-	-	<5
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	7.46	1,440	-	920,000	-	16,000	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<4	<4	<2	7.58	1,410	-	889,000	-	12,000	-	-	-	<5
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	7.45	22,000	-	15,100,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	7.11	19,400	-	15,000,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	7.51	21,300	-	14,000,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	7.53	18,900	-	14,200,000	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	7.55	22,000	-	14,900,000	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	7.3	615	-	316,000	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	7.49	4,370	-	2,580,000	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	8.51	1,330	-	764,000	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<5	<5	<5	7.5	16,000	38,000	9,400,000	-	-	<5	<5	<5	<5
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	8	29,000	7,800	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	5	27,000	41,000	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	-	7.1	24,000	520,000	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	5.3	21,000	34,000	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<4	<4	<2	6.04	21,500	-	16,400,000	-	3,000	-	-	-	<5
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	6.52	24,800	-	17,100,000	-	3,000	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	5.6	29,000	-	20,000,000	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	5.6	29,000	30,000	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	-	7.7	23,000	65,000	12,000,000	-	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	7.7	16,000	240,000	10,000,000	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<4	<4	<2	5.51	29,800	-	-	20,700,000	-	-	-	-	-
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	5.25	29,900	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<4	<4	<2	4.91	29,900	-	21,700,000	-	7,000	-	-	-	<5
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<4	<4	<2	4.65	28,300	-	20,600,000	-	8,000	-	-	-	<5
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	5.18	20,200	-	23,200,000	-	8,000	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<4	<4	<2	-	-	-	-	-	-	-	-	-	<5
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	6.44	16,700	-	15,500,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	6.59	19,800	-	13,700,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	6.96	20,300	-	14,200,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	6.55	21,100	-	15,700,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	7.71	18,800	-	15,200,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	7.93	20,100	-	13,200,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	7.71	20,500	-	15,700,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	7.83	25,000	-	17,200,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	7.38	18,600	-	11,800,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<4	<4	<2	7.26	1,480	-	1,160,000	-	40,000	-	-	-	<5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<4	<4	<2	7.28	2,500	-	1,630,000	-	26,000	-	-	-	<5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<4	<4	<2	7.18	28,000	-	20,800,000	-	2,000	-	-	-	<5
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	7.59	25,400	-	19,400,000	-	6,000	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<4	<4	<2	7.78	27,200	-	22,200,000	-	36,000	-	-	-	<5

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	pH (lab)	Electrical Conductivity @ 25C (lab)	Total suspended particulates	Total Dissolved Solids (TDS)	Total Dissolved Solids (TDS) (filtered)	TOC	1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,3-trichlorobenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pH_unit	µS/cm	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	4	4	2	0.01	1		10,000	10,000	1,000				5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		65		550							4	5	7	10
AS2159 – 2009 Piling – Design and Installation													<5.5			35,000,000	35,000,000					
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													6.5 - 8.0									
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	7.55	12,800	-	10,400,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	7.55	23,900	-	15,600,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	7.78	24,600	-	16,800,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	17,200	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	<5
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	<5
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	-	7.1	21,000	28,000	13,000,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<5	<5	<50	7.1	32,000	5,300	-	-	-	<5	<5	-	<5
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<4	<4	<2	7.5	28,300	-	20,000,000	-	-	-	-	-	<5
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	6.7	26,300	-	22,000,000	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<4	<4	<2	5.31	25,800	-	20,000,000	-	16,000	-	-	-	<5
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<4	<4	<2	5.78	24,600	-	18,600,000	-	7,000	-	-	-	<5
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<20	<4	<5	-	-	-	-	-	-	<5	<5	-	<5
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	-	6.7	11,000	37,000	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<4	<4	<2	6.26	8,390	-	5,260,000	-	2,000	-	-	-	<5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	6.3	8,490	-	5,070,000	-	2,000	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	5.68	11,500	-	6,930,000	-	4,000	-	-	-	<5
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	6.1	10,300	-	6,560,000	-	4,000	-	-	-	<5
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	5.89	12,100	-	7,560,000	-	4,000	-	-	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

											Halogenated Benzenes										Halogenated Hydroc	
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	5	5	5	5	2	5	50	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		13	170	160	260	60				55	2			
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<10	<10	<10	<10	<2	<10	<100	<100
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<10	<10	<10	<10	<2	<10	<100	<100
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<10	<10	<10	<10	<2	<10	<100	<100
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<10	<10	<10	<10	<2	<10	<100	<100
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<10	<10	<10	<10	<2	<10	<100	<100
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	5	5	5	5	2	5	50	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		13	170	160	260	60				55	2			
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<50	<50	<50	<50	<2	<50	<500	<500
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<50	<50	<50	<50	<2	<50	<500	<500
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<50	<50	<50	<50	<2	<50	<500	<500
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	<2	<2	<2	<2	<50	<50	<50	<50	<2	<50	<500	<500
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	<2	<2	<2	<2	<20	<20	<20	<20	<2	<20	<200	<200
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	<2	<2	<2	<2	<50	<50	<50	<50	<2	<50	<500	<500
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<50	<50	<50	<50	<2	<50	<500	<500
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	<2	<2	<2	<2	<50	<50	<50	<50	<2	<50	<500	<500
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	<2	<2	<2	<2	<10	<10	<10	<10	<2	<10	<100	<100
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	<2	<2	<2	<2	<10	<10	<10	<10	<2	<10	<100	<100
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	5	5	5	5	2	5	50	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		13	170	160	260	60				55	2			
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	5	5	5	5	2	5	50	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		13	170	160	260	60				55	2			
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	5	5	5	5	2	5	50	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		13	170	160	260	60				55	2			
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<5	<5	<1	<1	<1	-	<1	<1	<1	<5	<1	<1	<1
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	<1	<1	<0.01	-	<1	<1	<0.01	-	<1	<1	<1
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	<1	<1	<0.01	-	<1	<1	<0.01	-	<1	<1	<1
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	<1	<1	<0.01	-	<1	<1	<0.01	-	<1	<1	<1
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	<1	<1	<0.01	-	<1	<1	<0.01	-	<1	<1	<1
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	<1	<1	<0.01	-	<1	<1	<0.01	-	<1	<1	<1
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	<2	<2	<2	<5	<5	<5	<5	-	<5	<50	<50
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		2	2	2	2	5	5	5	5	2	5	50	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		13	170	160	260	60				55	2			
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	<1	<1	<0.01	-	<1	<1	<0.01	-	<1	<1	<1
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	-	<1	<1	<0.01	-	<1	<1	<0.01	<5	<1	<1	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	-	<1	<1	<1	-	<1	<1	<1	<2	<1	<1	<1
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	<2	<2	<2	-	<2	<2	<2	-	<2	<2	<2
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	<2	<2	<2	<2	<5	<5	<5	<5	<2	<5	<50	<50
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<50	<50

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

										arbons												
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Iodomethane	Trichlorofluoromethane	Chlorinated hydrocarbons EPAVic	Other chlorinated hydrocarbons EPAVic	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloropropene	1,1-dichloroethane	1,2-Dichloroethene	1,1-dichloroethene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50				5	5	5	5	5	5		5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								270	400	6,500				700
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<1	<1	-	-	-	<1	<1	<1	<1	-	<1	-	<1
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<10	<100	-	-	-	<10	<10	<10	<10	<10	<10	-	<10
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<10	<100	-	-	-	<10	<10	<10	<10	<10	<10	-	<10
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<10	<100	-	-	-	<10	<10	<10	<10	<10	<10	-	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<100	-	-	-	<10	<10	<10	<10	<10	<10	-	11
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<100	-	-	-	<10	<10	<10	<10	<10	<10	-	<10
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Iodomethane	Trichlorofluoromethane	Chlorinated hydrocarbons EPAVic		Other chlorinated hydrocarbons EPAVic	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloropropene	1,1-dichloroethane	1,2-Dichloroethene	1,1-dichloroethene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50				5	5	5	5	5	5		5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								270	400	6,500				700
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<50	<500	-	-	-	<50	<50	<50	<50	<50	<50	-	<50
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<50	<500	-	-	-	<50	<50	<50	<50	<50	<50	-	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<50	<500	-	-	-	<50	<50	<50	<50	<50	<50	-	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<50	<500	-	-	-	<50	<50	<50	<50	<50	<50	-	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<20	<200	-	-	-	<20	<20	<20	<20	<20	<20	-	<20
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<50	<500	-	-	-	<50	<50	<50	<50	<50	<50	-	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<50	<500	-	-	-	<50	<50	<50	<50	<50	<50	-	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<50	<500	-	-	-	<50	<50	<50	<50	<50	<50	-	<50
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<10	<100	-	-	-	<10	<10	<10	<10	<10	<10	-	<10
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<10	<100	-	-	-	<10	<10	<10	<10	<10	<10	-	<10
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	8
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	9
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Iodomethane	Trichlorofluoromethane	Chlorinated hydrocarbons EPAVic		Other chlorinated hydrocarbons EPAVic	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloropropene	1,1-dichloroethane	1,2-Dichloroethene	1,1-dichloroethene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50				5	5	5	5	5	5		5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								270	400	6,500				700
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Iodomethane	Trichlorofluoromethane	Chlorinated hydrocarbons EPAVic		Other chlorinated hydrocarbons EPAVic	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloropropene	1,1-dichloroethane	1,2-Dichloroethene	1,1-dichloroethene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50				5	5	5	5	5	5		5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								270	400	6,500				700
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Iodomethane	Trichlorofluoromethane	Chlorinated hydrocarbons EPAVic		Other chlorinated hydrocarbons EPAVic	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloropropene	1,1-dichloroethane	1,2-Dichloroethene	1,1-dichloroethene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50				5	5	5	5	5	5		5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								270	400	6,500				700
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<1	<1	-	<0.005	<0.005	<1	<1	<1	<1	-	<1	-	<1
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<1	<1	-	<0.005	<0.005	<1	<1	<1	<1	-	<1	-	<1
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	-	-	<0.005	<1	<1	<1	<1	-	<0.01	-	<1
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	-	-	-	<1	<1	<1	<1	-	<0.01	-	<1
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<1	<1	-	0.009	0.009	<1	<1	<1	<1	-	<1	-	<1
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<1	<1	-	<0.005	<0.005	<1	<1	<1	<1	-	<1	-	<1
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<1	<1	-	-	0.059	<1	<1	<1	<1	-	<0.01	-	<1
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<1	<1	-	<0.005	<0.005	<1	<1	<1	<1	-	<1	-	<1
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<1	<1	-	-	-	<1	<1	<1	<1	-	<0.01	-	<1
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<1	<1	-	-	<0.005	<1	<1	<1	<1	-	<0.01	-	<1
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<1	<1	-	<0.005	<0.005	<1	<1	<1	<1	-	<1	-	<1
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<1	<1	-	<0.005	<0.005	<1	<1	<1	<1	-	<1	-	<1
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Iodomethane	Trichlorofluoromethane	Chlorinated hydrocarbons EPAVic		Other chlorinated hydrocarbons EPAVic	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloropropene	1,1-dichloroethane	1,2-Dichloroethene	1,1-dichloroethene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50				5	5	5	5	5	5		5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2								270	400	6,500				700
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<1	<1	-	<0.005	<0.005	<1	<1	<1	<1	-	<1	-	<1
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<1	<1	-	-	<0.005	<1	<1	<1	<1	-	<0.01	-	<1
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<1	<1	-	-	<0.005	<1	<1	<1	<1	-	<0.01	-	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<1	<1	-	<0.005	<0.005	<1	<1	<1	<1	-	<1	-	<1
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<2	<2	-	-	<0.005	<2	<2	<2	<2	-	<2	-	<2
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	<5	<50	-	-	-	<5	<5	<5	<5	<5	<5	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

																			Chlorinated Hydrocarbons		
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Benzyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5	5	5	5			5	5	5	5	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				1,900	900	1,100						240		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<1	-	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<10	<10	<10	<10	<10	<10	-	-	<10	<10	<10	<10	<100
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<10	<10	<10	<10	<10	<10	-	-	<10	<10	<10	<10	<100
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<10	<10	<10	<10	<10	<10	-	-	<10	<10	<10	<10	<100
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<10	<10	<10	<10	<10	-	-	<10	<10	<10	<10	<100
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<10	<10	<10	<10	<10	-	-	<10	<10	<10	<10	<100
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Benzyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5	5	5	5			5	5	5	5	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				1,900	900	1,100						240		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<50	<50	<50	<50	<50	<50	-	-	<50	<50	<50	<50	<500
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<50	<50	<50	<50	<50	<50	-	-	<50	<50	<50	<50	<500
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<50	<50	<50	<50	<50	<50	-	-	<50	<50	<50	<50	<500
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<50	<50	<50	<50	<50	<50	-	-	<50	<50	<50	<50	<500
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<20	<20	<20	<20	<20	<20	-	-	<20	<20	<20	<20	<200
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<50	<50	<50	<50	<50	<50	-	-	<50	<50	<50	<50	<500
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<50	<50	<50	<50	<50	<50	-	-	<50	<50	<50	<50	<500
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<50	<50	<50	<50	<50	<50	-	-	<50	<50	<50	<50	<500
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<10	<10	<10	<10	<10	<10	-	-	<10	<10	<10	<10	<100
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<10	<10	<10	<10	<10	<10	-	-	<10	<10	<10	<10	<100
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Benzyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5	5	5	5			5	5	5	5	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				1,900	900	1,100						240		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Benzyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5	5	5	5			5	5	5	5	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				1,900	900	1,100						240		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Benzyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5	5	5	5			5	5	5	5	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				1,900	900	1,100						240		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<1	-	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<1	-	<1	<1	<1	-	<5	<1	<1	<1	<1	<1	<1
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	-	<0.01	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	-	<0.01	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<1	-	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<1	-	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<1	-	<0.01	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<1	-	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<1	-	<0.01	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<1	-	<0.01	<1	<1	-	-	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<1	-	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<1	-	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Benzyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5	5	5	5			5	5	5	5	50
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2				1,900	900	1,100						240		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<1	-	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<1	-	<0.01	<1	<1	-	-	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<1	-	<0.01	<1	<1	-	<5	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<1	-	<1	<1	<1	-	<5	<1	<1	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<2	-	<2	<2	<2	-	-	<2	<2	<2	<2	<2	<2
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<50

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

Monitoring Zone	Location Code	Date	Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorocyclopentadiene	Hexachloroethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50	5	5	5		10	2	2	5	5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		770					4,000		360		330	70		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<5	<1	<1	<1	<1	<1	-	-	-	-	<1	<1	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	6	<5	<5	<5
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<5	<50	6	<5	<5	-	<10	<2	<2	13	<5	<5	<5
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<10	<100	<10	<10	<10	-	<10	<2	<2	113	2,110	<10	<10
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<10	<100	<10	<10	<10	-	<10	<2	<2	112	2,260	<10	<10
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<10	<100	4,140	<10	<10	-	<10	<2	<2	102	494	25	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<100	4,220	<10	<10	-	<10	<2	<2	28	31	26	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<100	3,680	<10	<10	-	<10	<2	<2	49	101	22	<10
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<5	<50	1,500	<5	<5	-	<10	<2	<2	325	225	12	<5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<5	<50	1,640	<5	<5	-	<10	<2	<2	489	382	13	<5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<5	<50	1,290	<5	<5	-	<10	<2	<2	858	979	10	<5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<5	<50	1,500	<5	<5	-	<10	<2	<2	499	555	11	<5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<5	<50	1,450	<5	<5	-	<10	<2	<2	486	599	10	<5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<5	<50	1,520	<5	<5	-	<10	<2	<2	458	485	11	<5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<5	<50	<5	<5	<5	-	-	-	<5	<5	<5	<5	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<5	<50	<5	<5	<5	-	-	-	<5	<5	<5	<5	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	-	-	<5	<5	<5	<5	<5
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<5	<50	<5	<5	<5	-	-	-	<5	<5	<5	<5	<5
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<5	<50	<5	<5	<5	-	-	-	<5	<5	<5	<5	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorocyclopentadiene	Hexachloroethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50	5	5	5		10	2	2	5	5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		770					4,000		360		330	70		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	6	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<50	<500	<50	<50	<50	-	<10	<2	<2	72	24,300	<50	<50
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<50	<500	<50	<50	<50	-	<10	<2	<2	60	19,300	<50	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<50	<500	<50	<50	<50	-	<10	<2	<2	62	24,500	<50	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<50	<500	<50	<50	<50	-	<10	<2	<2	53	18,800	<50	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<20	<200	<20	<20	<20	-	<10	<2	<2	43	9,720	<20	<20
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<50	<500	<50	<50	<50	-	<10	<2	<2	<50	14,100	<50	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<50	<500	<50	<50	<50	-	<10	<2	<2	<50	13,600	<50	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<50	<500	<50	<50	<50	-	<10	<2	<2	58	19,300	<50	<50
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<10	<100	3,510	<10	<10	-	<10	<2	<2	<10	<10	29	<10
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<10	<100	3,550	<10	<10	-	<10	<2	<2	<10	<10	29	<10
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<5	<50	1,560	<5	<5	-	<10	<2	<2	<5	<5	18	<5
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<5	<50	1,890	<5	<5	-	<10	<2	<2	6	<5	16	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<5	<50	105	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<5	<50	37	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<5	<50	997	<5	<5	-	<10	<2	<2	9	5	10	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	68	<5	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	54	<50	5	<5	<5	-	<10	<2	<2	7	203	<5	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	9	<50	<5	<5	<5	-	<10	<2	<2	<5	96	<5	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	13	<50	28	<5	<5	-	<10	<2	<2	5	20	<5	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	10	<5	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	8	<50	19	<5	<5	-	<10	<2	<2	<5	15	<5	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	6	<5	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	6	<50	14	<5	<5	-	<10	<2	<2	<5	11	<5	<5
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorocyclopentadiene	Hexachloroethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50	5	5	5		10	2	2	5	5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		770					4,000		360		330	70		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	12	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	9	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	9	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	9	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	11	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorocyclopentadiene	Hexachloroethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50	5	5	5		10	2	2	5	5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		770					4,000		360		330	70		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorocyclopentadiene	Hexachloroethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50	5	5	5		10	2	2	5	5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		770					4,000		360		330	70		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<5	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<5	<1	<1	<1	<1	<1	<5	<5	<5	<1	<1	<1	<1
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<5	<1	<0.01	<1	<1	<0.02	-	-	-	<0.01	<0.02	<1	<1
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<5	<1	<0.01	<1	<1	<0.02	-	-	-	-	<0.02	<1	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	9	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<5	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	55	<1	<0.01	<1	<1	3.7	-	-	-	<0.01	<0.02	<1	<1
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<5	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<5	<1	<0.01	<1	<1	0.14	-	-	-	-	<0.02	<1	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<5	<1	<0.01	<1	<1	0.14	-	-	-	<0.01	<0.02	<1	<1
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<5	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<5	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<5	<50	<5	<5	<5	-	<10	<2	-	<5	<5	<5	<5
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorocyclopentadiene	Hexachloroethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	50	5	5	5		10	2	2	5	5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		770					4,000		360		330	70		
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<5	<50	<5	<5	<5	-	-	-	<5	<5	<5	<5	<5
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<5	<50	<5	<5	<5	-	-	-	<5	<5	<5	<5	<5
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<5	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<5	<1	<0.01	<1	<1	<0.02	-	-	-	<0.01	<0.02	<1	<1
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<5	<1	<0.01	<1	<1	0.09	<5	<5	<5	<0.01	<0.02	<1	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<5	<50	<5	<5	<5	-	<10	<2	<2	<5	<5	<5	<5
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<5	<1	<1	<1	<1	<1	<4	<2	<2	<1	<1	<1	<1
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<5	<2	<2	<2	<2	<2	-	-	-	<2	<2	<2	<2
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<5	<50	7	<5	<5	-	<10	<2	<2	90	1,900	<5	<5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	<5	<50	13	<5	<5	-	-	-	<5	12	5	<5	<5
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	<5	<50	12	<5	<5	-	-	-	<5	12	5	<5	<5
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	<5	<50	11	<5	<5	-	-	-	<5	8	<5	<5	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

													Herbicides				Inorganics					
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Vinyl chloride	trichloroethane (1,1,1 & 1,1,2)	2,4,5-Trichlorophenoxy-propanoic acid	Pronamide	Trifluralin	Fluoride	Reactive Phosphorus as P (Orthophosphate as P)	Total Phosphorus as P (Organic Phosphate as P)	Sulfate as SO4	Sulfate as SO4 (filtered)	Aggressivity	Alkalinity (Carbonate as CaCO3)	Total Suspended Solids (TSS)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	-	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50			2		100	10	10	1,000	1,000			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		100				4.4								
AS2159 – 2009 Piling – Design and Installation																		1,000,000	1,000,000			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																	140					
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<1	<1	-	-	-	<500	-	-	2,100,000	-	-	-	43,000
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	<500	-	-	2,000,000	-	-	-	170,000
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	180	-	87,000	-	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	<10	510	-	234,000	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	660	-	702,000	-	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	20	1,950	-	627,000	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<50	-	-	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	40	200	-	51,000	-	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	20	280	-	44,000	-	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	90	-	421,000	-	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	40	-	70,000	-	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	10	-	105,000	-	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<100	-	-	<2	-	-	<10	30	-	180,000	-	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<100	-	-	<2	-	-	<10	20	-	185,000	-	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	300	-	-	<2	-	-	20	520	-	54,000	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	320	-	-	<2	-	-	<10	340	-	62,000	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	260	-	-	<2	-	-	<10	360	-	67,000	-	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	170	-	-	<2	-	-	<10	640	-	57,000	-	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	170	-	-	<2	-	-	<10	380	-	60,000	-	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	80	-	-	<2	-	-	<10	490	-	55,000	-	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	150	-	69,000	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	270	-	70,000	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	120	-	-	<2	-	-	<10	100	-	76,000	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<50	-	-	<2	-	-	<10	50	-	447,000	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<50	-	-	<2	-	-	<10	<20	-	426,000	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<50	-	-	<2	-	-	<10	320	-	440,000	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<50	-	-	<2	-	-	<10	90	-	351,000	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<50	-	-	<2	-	-	<10	160	-	364,000	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<50	-	-	<2	-	-	<10	70	-	328,000	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<50	-	-	-	-	-	<10	80	-	311,000	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<50	-	-	-	-	-	<10	120	-	76,000	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<50	-	-	-	-	-	<10	110	-	396,000	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	160	-	640,000	-	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<50	-	-	-	-	-	<10	60	-	702,000	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	<10	640	-	399,000	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<50	-	-	<2	-	-	<10	100	-	2,220,000	-	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<50	-	-	<2	-	-	20	210	-	2,100,000	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<50	-	-	<2	-	-	<10	110	-	2,150,000	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	40	-	9,000	-	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	<10	40	-	12,000	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	360	-	-	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<50	-	-	<2	-	-	<10	80	-	433,000	-	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	<10	<50	-	452,000	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	<10	2,520	-	459,000	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	<20	-	-	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<50	-	-	<2	-	-	<10	90	-	195,000	-	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	40	-	205,000	-	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	<10	80	-	207,000	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	<10	620	-	186,000	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<50	-	-	<2	-	-	20	80	-	592,000	-	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<50	-	-	-	-	-	20	<50	-	635,000	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Vinyl chloride	trichloroethane (1,1,1 & 1,1,2)	2,4,5-Trichlorophenoxy-propanoic acid	Pronamide	Trifluralin	Fluoride	Reactive Phosphorus as P (Orthophosphate as P)	Total Phosphorus as P (Organic Phosphate as P)	Sulfate as SO4	Sulfate as SO4 (filtered)	Aggressivity	Alkalinity (Carbonate as CaCO3)	Total Suspended Solids (TSS)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	-	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50			2		100	10	10	1,000	1,000			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		100				4.4								
AS2159 – 2009 Piling – Design and Installation																		1,000,000	1,000,000			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																	140					
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	20	2,940	-	723,000	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<50	-	-	<2	-	-	<10	1,940	-	-	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<50	-	-	<2	-	-	110	2,170	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<50	-	-	<2	-	-	<100	4,860	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<50	-	-	<2	-	-	<100	2,550	-	-	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<50	-	-	<2	-	-	<10	330	-	-	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	60	3,200	-	-	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<100	10,900	-	-	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	110	-	-	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	70	2,480	-	-	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<100	4,680	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<50	-	-	<2	-	-	<10	6,440	-	1,450,000	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<50	-	-	<2	-	-	<10	1,530	-	1,390,000	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<50	-	-	<2	-	-	<10	780	-	1,020,000	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<50	-	-	<2	-	-	<10	10,100	-	1,360,000	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<50	-	-	<2	-	-	<10	5,470	-	1,420,000	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	5,710	-	576,000	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	480	-	1,560,000	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	190	-	430,000	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	150	-	1,510,000	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	<10	70	-	1,370,000	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	<10	1,270	-	100,000	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	<10	150	-	1,550,000	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<50	-	-	<2	-	-	<10	1,480	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	60	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<50	-	-	<2	-	-	<10	<50	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	2,800	-	632,000	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	8,740	-	630,000	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<50	-	-	<2	-	-	<10	18,800	-	663,000	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	33,200	-	654,000	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	650	-	725,000	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	10	820	-	721,000	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	100	-	723,000	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	<10	21,600	-	698,000	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<500	-	-	<2	-	-	<10	<50	-	762,000	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<500	-	-	<2	-	-	<10	110	-	654,000	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<500	-	-	<2	-	-	<10	370	-	639,000	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<500	-	-	<2	-	-	<10	240	-	672,000	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<200	-	-	<2	-	-	<10	1,080	-	733,000	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<500	-	-	<2	-	-	<10	370	-	710,000	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<500	-	-	<2	-	-	<10	180	-	662,000	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<500	-	-	<2	-	-	<10	<100	-	658,000	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	210	-	-	<2	-	-	4,310	6,350	-	40,000	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	200	-	-	<2	-	-	1,970	2,450	-	311,000	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	180	-	-	<2	-	-	7,020	12,200	-	85,000	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	260	-	-	<2	-	-	1,680	8,060	-	382,000	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	22,000	-	769,000	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	29,400	-	780,000	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	140	-	-	<2	-	-	340	6,700	-	354,000	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	230	-	768,000	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<50	-	-	<2	-	-	<10	280	-	425,000	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	5,580	-	740,000	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	420	-	676,000	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	1,110	-	739,000	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	2,320	-	754,000	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	70	-	642,000	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	80	-	802,000	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	<50	-	762,000	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<50	-	-	<2	-	-	<10	50	-	-	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<50	-	-	<2	-	-	<10	310	-	603,000	-	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<50	-	-	<2	-	-	60	130	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Vinyl chloride	trichloroethane (1,1,1 & 1,1,2)	2,4,5-Trichlorophenoxy-propanoic acid	Pronamide	Trifluralin	Fluoride	Reactive Phosphorus as P (Orthophosphate as P)	Total Phosphorus as P (Organic Phosphate as P)	Sulfate as SO4	Sulfate as SO4 (filtered)	Aggressivity	Alkalinity (Carbonate as CaCO3)	Total Suspended Solids (TSS)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	-	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50			2		100	10	10	1,000	1,000			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		100				4.4								
AS2159 – 2009 Piling – Design and Installation																		1,000,000	1,000,000			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																	140					
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<50	-	-	<2	-	-	30	520	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<50	-	-	<2	-	-	<10	430	-	339,000	-	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	<10	1,580	-	358,000	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<50	-	-	<2	-	-	<10	110	-	263,000	-	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<50	-	-	<2	-	-	<10	120	-	242,000	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	<10	790	-	41,000	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	820	-	38,000	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	50	-	518,000	-	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	<10	2,230	-	545,000	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<50	-	-	<2	-	-	<10	400	-	194,000	-	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	<10	70	-	194,000	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<50	-	-	<2	-	-	<10	40	-	201,000	-	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	<10	40	-	187,000	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<50	-	-	<2	-	-	<10	180	-	813,000	-	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<50	-	-	<2	-	-	<10	910	-	772,000	-	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<50	-	-	<2	-	-	<10	160	-	792,000	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<50	-	-	<2	-	-	<10	100	-	719,000	-	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<50	-	-	<2	-	-	<10	2,410	-	760,000	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<50	-	-	<2	-	-	-	<50	-	2,770,000	-	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<50	-	-	<2	-	-	<10	<100	-	2,360,000	-	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<50	-	-	<2	-	-	<10	80	-	2,770,000	-	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<50	-	-	<2	-	-	-	80	-	3,110,000	-	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<50	-	-	<2	-	-	<10	<100	-	2,970,000	-	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	<10	520	-	-	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	580	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<50	-	-	<2	-	300	-	-	352,000	-	-	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	300	-	-	961,000	-	-	-	37,000
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	300	-	-	672,000	-	-	-	36,000
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	587,000	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	300	-	-	667,000	-	-	-	12,000
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	200	-	-	827,000	-	-	-	17,000
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	<100	-	-	10,000	-	-	-	44,000
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<50	-	-	<2	-	<100	-	-	11,000	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	11,000	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	10,000	-	-	-	195,000
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	<100	-	-	10,000	-	-	-	44,000
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	<100	-	-	8,000	-	-	-	58,000
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	100	-	-	8,000	-	-	-	151,000
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	532,000	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<50	-	-	<2	-	300	-	-	532,000	-	-	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	951,000	-	-	-	133,000
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	400	-	-	936,000	-	-	-	9,000
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	100	-	-	95,000	-	-	-	18,000
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	100	-	-	99,000	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<50	-	-	<2	-	200	-	-	<1,000	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	200	-	-	31,000	-	-	-	1,660,000
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	200	-	-	27,000	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	200	-	-	8,000	-	-	-	8,000
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	200	-	-	<1,000	-	-	-	94,000
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	300	-	-	587,000	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	300	-	-	592,000	-	-	-	6,000

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Vinyl chloride	trichloroethane (1,1,1 & 1,1,2)	2,4,5-Trichlorophenoxy-propanoic acid	Pronamide	Trifluralin	Fluoride	Reactive Phosphorus as P (Orthophosphate as P)	Total Phosphorus as P (Organic Phosphate as P)	Sulfate as SO4	Sulfate as SO4 (filtered)	Aggressivity	Alkalinity (Carbonate as CaCO3)	Total Suspended Solids (TSS)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	-	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50			2		100	10	10	1,000	1,000			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		100				4.4								
AS2159 – 2009 Piling – Design and Installation																		1,000,000	1,000,000			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																	140					
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	300	-	-	549,000	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	300	-	-	434,000	-	-	-	20,000
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	200	-	-	408,000	-	-	-	60,000
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	422,000	-	-	-	12,000
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	500	-	-	79,000	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	400	-	-	66,000	-	-	-	370,000
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	500	-	-	45,000	-	-	-	88,000
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	600	-	-	46,000	-	-	-	26,000
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	300	-	-	18,000	-	1	-	113,000
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	<10,000	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	200	-	-	<1,000	-	-	-	166,000
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	300	-	-	2,000	-	-	-	54,000
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	5,000	-	-	-	24,000
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	300	-	-	31,000	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	200	-	-	33,000	-	-	-	78,000
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	38,000	-	-	-	66,000
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	300	-	-	<1,000	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	2,000	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	300	-	-	3,000	-	-	-	28,000
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	22,000
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	40	380	-	52,000	-	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	20	300	-	51,000	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	400	-	-	331,000	-	-	-	<5,000
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	400	-	-	317,000	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	400	-	-	318,000	-	-	-	5,000
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	300	-	-	326,000	-	-	-	<5,000
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	200	-	-	5,000	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	200	-	-	<1,000	-	-	-	28,000
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	300	-	-	20,000	-	-	-	32,000
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	200	-	-	11,000	-	1	-	16,000
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	200	-	-	237,000	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	200	-	-	169,000	-	-	-	68,000
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	300	-	-	141,000	-	-	-	26,000
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	200	-	-	160,000	-	1	-	18,000
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	400	-	-	16,000	-	-	-	28,000
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	400	-	-	44,000	-	-	-	130,000
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	400	-	-	64,000	-	-	-	18,000
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	400	-	-	26,000	-	1	-	15,000
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<50	-	-	<2	-	100	-	-	137,000	-	-	-	20,000
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	200	-	-	257,000	-	-	-	10,000
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	300	-	-	202,000	-	-	-	22,000
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	300	-	-	310,000	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	197,000	-	-	-	25,000
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	200	-	-	257,000	-	-	-	53,000
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	200	-	-	821,000	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	200	-	-	1,010,000	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	300	-	-	834,000	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	300	-	-	629,000	-	1	-	82,000
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	500	-	-	679,000	-	-	-	19,000
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	300	-	-	632,000	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	500	-	-	624,000	-	-	-	21,000
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	300	-	-	526,000	-	-	-	6,000
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	300	-	-	680,000	-	-	-	<5,000
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	200	-	-	930,000	-	-	-	36,000
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	337,000	-	-	-	18,000
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	429,000	-	-	-	12,000
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	200	-	-	392,000	-	1	-	25,000
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	100	-	-	64,000	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	200	-	-	46,000	-	-	-	62,000
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	<100	-	-	25,000	-	-	-	62,000
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	<100	-	-	145,000	-	1	-	44,000

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Vinyl chloride	trichloroethane (1,1,1 & 1,1,2)	2,4,5-Trichlorophenoxy-propanoic acid	Pronamide	Trifluralin	Fluoride	Reactive Phosphorus as P (Orthophosphate as P)	Total Phosphorus as P (Organic Phosphate as P)	Sulfate as SO4	Sulfate as SO4 (filtered)	Aggressivity	Alkalinity (Carbonate as CaCO3)	Total Suspended Solids (TSS)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	-	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50			2		100	10	10	1,000	1,000			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		100				4.4								
AS2159 – 2009 Piling – Design and Installation																		1,000,000	1,000,000			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																	140					
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	80	-	143,000	-	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	<10	80	-	147,000	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	<10	90	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	300	-	-	877,000	-	-	-	32,000
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	600	-	-	955,000	-	-	-	15,000
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	600	-	-	1,370,000	-	-	-	20,000
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	500	-	-	1,380,000	-	-	-	10,000
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	400	-	-	1,120,000	-	1	-	456,000
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	200	-	-	16,000	-	-	-	52,000
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	200	-	-	130,000	-	-	-	34,000
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	200	-	-	36,000	-	-	-	332,000
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<1	<1	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<1	<1	-	<5	<5	<500	-	-	380,000	-	-	-	38,000
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<1	-	-	-	-	600	-	-	1,400,000	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<1	-	-	-	-	<500	-	-	430,000	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<0.05	-	-	-	-	<500	-	-	1,200,000	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<1	-	-	-	-	<500	-	-	200,000	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<50	-	-	<2	-	-	<10	370	-	462,000	-	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	<10	1,240	-	619,000	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<0.05	<0.01	-	-	-	<500	-	-	390,000	-	-	-	30,000
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<0.05	-	-	-	-	<500	-	-	390,000	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<1	<1	-	-	-	1,000	-	-	790,000	-	-	-	65,000
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<1	<1	-	-	-	<500	-	-	740,000	-	-	-	240,000
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<50	-	-	<2	-	700	-	-	-	480,000	-	<1,000	273,000
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	488,000	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<50	-	-	<2	-	-	<10	540	-	398,000	-	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<50	-	-	<2	-	-	<10	2,040	-	466,000	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<50	-	-	<2	-	-	10	2,500	-	466,000	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	<10	540	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<50	-	-	<2	-	-	<10	<50	-	403,000	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<50	-	-	<2	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	300	-	-	1,580,000	-	-	-	3,310,000
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	300	-	-	1,520,000	-	-	-	792,000
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	200	-	-	1,550,000	-	-	-	3,100,000
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	200	-	-	1,650,000	-	-	-	560,000
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	400	-	-	689,000	-	-	-	90,000
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	600	-	-	596,000	-	-	-	40,000
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	600	-	-	736,000	-	-	-	27,000
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	300	-	-	1,370,000	-	-	-	20,000
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	200	-	-	900,000	-	-	-	10,000
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<50	-	-	<2	-	-	460	1,560	-	43,000	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<50	-	-	<2	-	-	500	1,280	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<50	-	-	<2	-	-	10	840	-	1,070,000	-	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	1,260	1,820	-	828,000	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<50	-	-	<2	-	-	<10	970	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Vinyl chloride	trichloroethane (1,1,1 & 1,1,2)	2,4,5-Trichlorophenoxy-propanoic acid	Pronamide	Trifluralin	Fluoride	Reactive Phosphorus as P (Orthophosphate as P)	Total Phosphorus as P (Organic Phosphate as P)	Sulfate as SO4	Sulfate as SO4 (filtered)	Aggressivity	Alkalinity (Carbonate as CaCO3)	Total Suspended Solids (TSS)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	-	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50			2		100	10	10	1,000	1,000			
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2		100				4.4								
AS2159 – 2009 Piling – Design and Installation																		1,000,000	1,000,000			
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																	140					
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	600	-	-	784,000	-	-	-	63,000
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	600	-	-	1,450,000	-	-	-	35,000
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	600	-	-	1,570,000	-	-	-	20,000
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	500	-	-	1,230,000	-	1	-	14,000
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<50	-	-	-	-	300	-	-	262,000	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<50	-	-	-	-	<100	-	-	249,000	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<1	<1	-	-	-	<500	-	-	770,000	-	-	-	28,000
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<0.05	-	-	<5	<5	<500	-	-	550,000	-	-	-	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<50	-	-	<2	-	400	-	-	2,850,000	-	-	-	124,000
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	400	-	-	2,850,000	-	-	-	48,000
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<50	-	-	<2	-	-	<10	430	-	2,210,000	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<50	-	-	<2	-	-	<10	40	-	-	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<1	-	-	<5	<5	<500	-	-	2,100,000	-	-	-	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<2	-	-	-	-	<500	-	-	420,000	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<50	-	-	<2	-	-	20	30	-	216,000	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	20	170	-	214,000	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	<50	-	-	-	-	-	<10	100	-	335,000	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	<50	-	-	-	-	-	<10	210	-	276,000	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	<50	-	-	-	-	-	<10	230	-	335,000	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

												Nutrients									
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Nitrogen (Organic)	Nitrogen (Total Oxidised)	Reactive Phosphorus as P	Ammonia as N	Nitrite + Nitrate as N	Nitrate (as NO3-N)	Nitrite (as NO2-N)	Nitrogen (Total)	Phosphorus	Total Kjeldahl Nitrogen (TKN)	Phosphorus total	Phosphate total (P)	1,2,4-trimethylbenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	100	10	100			5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2					900									
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													900				1,720			140		
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	100	80	<50	<20	<20	<200	20	<200	-	-	<1
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	110	110	<50	<20	<20	<200	110	<200	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	-	10	1,380	1,380	<10	2,100	-	700	-	-	<5
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	130	140	140	<10	<500	-	<500	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	-	<100	50	50	<10	4,000	-	4,000	-	-	<5
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	110	40	40	<10	2,900	-	2,900	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	<5
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	-	<100	560	560	<10	1,600	-	1,000	-	-	<5
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	-	<100	590	590	<10	1,500	-	900	-	-	<5
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	-	<100	10	10	<10	500	-	500	-	-	<5
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	<10	2,580	2,580	<10	3,000	-	400	-	-	<5
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	-	20	710	710	<10	900	-	200	-	-	<5
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	-	40	30	30	<10	300	-	300	-	-	<10
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	-	40	140	140	<10	300	-	200	-	-	<10
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	-	1,510	20	20	<10	4,100	-	4,100	-	-	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	2,250	<10	<10	<10	4,500	-	4,500	-	-	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	4,350	580	570	10	7,900	-	7,300	-	-	<10
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	3,140	170	150	20	5,600	-	5,400	-	-	<5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	-	3,660	40	20	20	4,900	-	4,900	-	-	<5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	-	2,820	280	260	20	5,000	-	4,700	-	-	<5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	3,110	1,950	1,940	10	6,000	-	4,000	-	-	<5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	-	3,110	1,940	1,920	20	7,400	-	5,500	-	-	<5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	-	1,980	1,550	1,520	30	5,000	-	3,400	-	-	<5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	-	140	270	270	<10	800	-	500	-	-	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	-	330	130	120	10	700	-	600	-	-	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	-	210	270	270	<10	1,900	-	1,600	-	-	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	-	200	<10	<10	<10	600	-	600	-	-	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	-	90	110	100	10	900	-	800	-	-	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	-	120	70	60	10	600	-	500	-	-	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	140	90	90	<10	500	-	400	-	-	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	220	650	640	10	1,800	-	1,100	-	-	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	240	40	20	20	800	-	800	-	-	<5
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	-	100	20	<10	50	600	-	600	-	-	<5
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	140	10	<10	50	600	-	600	-	-	<5
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	730	1,120	880	240	4,800	-	3,700	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	-	340	<10	<10	10	900	-	900	-	-	<5
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	-	200	20	20	<10	1,700	-	1,700	-	-	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	-	370	290	290	<10	2,100	-	1,800	-	-	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	80	550	530	20	1,000	-	500	-	-	<5
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	50	490	490	<10	1,100	-	600	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	-	140	700	700	<10	2,400	-	1,700	-	-	<5
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	-	760	<10	<10	<10	1,100	-	1,100	-	-	<5
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	520	10	10	<10	1,100	-	1,100	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	510	3,330	3,330	<10	4,300	-	1,000	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	40	70	50	20	500	-	400	-	-	<5
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	-	80	80	80	<10	600	-	500	-	-	<5
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	-	<100	90	90	<10	300	-	200	-	-	<5
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	50	110	110	<10	600	-	500	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	40	100	80	20	400	-	300	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	-	130	480	480	<10	1,500	-	1,000	-	-	<5
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	190	340	340	<10	1,500	-	1,200	-	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Nitrogen (Organic)	Nitrogen (Total Oxidised)	Reactive Phosphorus as P	Ammonia as N	Nitrite + Nitrate as N	Nitrate (as NO3-N)	Nitrite (as NO2-N)	Nitrogen (Total)	Phosphorus	Total Kjeldahl Nitrogen (TKN)	Phosphorus total	Phosphate total (P)	1,2,4-trimethylbenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	100	10	100			5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2					900									
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													900				1,720			140		
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	190	290	280	10	1,100	-	800	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	-	200	50	50	<10	5,000	-	4,900	-	-	<5
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	-	200	<10	<10	<10	5,000	-	5,000	-	-	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	-	340	80	10	70	12,300	-	12,200	-	-	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	-	200	<10	<10	<10	<5,000	-	<5,000	-	-	<5
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	-	380	<10	<10	<10	1,500	-	1,500	-	-	<5
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	-	270	20	20	<10	5,500	-	5,500	-	-	<5
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	-	560	20	20	<10	<10,000	-	<10,000	-	-	<5
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	-	180	<10	<10	<10	800	-	800	-	-	<5
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	-	200	40	40	<10	9,700	-	9,700	-	-	<5
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	-	210	<10	<10	<10	<5,000	-	<5,000	-	-	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	-	<100	50	30	20	29,800	-	29,700	-	-	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	-	<100	30	10	20	6,200	-	6,200	-	-	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	-	<100	300	240	60	4,300	-	4,000	-	-	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	-	<100	60	50	10	28,300	-	28,200	-	-	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	-	<100	280	260	20	15,300	-	15,000	-	-	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	-	150	370	320	50	19,600	-	19,200	-	-	8
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	-	240	50	50	<10	2,600	-	2,500	-	-	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	-	730	170	130	40	3,200	-	3,000	-	-	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	-	240	20	20	<10	1,400	-	1,400	-	-	<5
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	240	<10	<10	<10	1,100	-	1,100	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	500	90	<10	270	6,000	-	5,900	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	220	<10	<10	<10	1,100	-	1,100	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	-	290	<10	<10	10	5,800	-	5,800	-	-	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	-	30	310	310	<10	900	-	600	-	-	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	-	230	<10	<10	<10	700	-	700	-	-	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	-	<100	<10	<10	<10	5,200	-	5,200	-	-	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	-	<100	20	10	10	15,300	-	15,300	-	-	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	-	140	50	40	10	20,200	-	20,100	-	-	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	-	150	40	30	10	47,400	-	47,400	-	-	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	-	280	70	70	<10	1,700	-	1,600	-	-	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	-	120	60	60	<10	1,700	-	1,600	-	-	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	-	190	20	20	<10	1,100	-	1,100	-	-	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	170	<10	<10	<10	31,800	-	31,800	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	-	260	70	60	10	<500	-	<500	-	-	<50
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	-	240	60	60	<10	700	-	600	-	-	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	-	140	10	10	<10	<2,000	-	<2,000	-	-	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	-	400	10	10	<10	<2,000	-	<2,000	-	-	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	-	270	30	30	<10	5,200	-	5,200	-	-	<20
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	-	<100	20	20	<10	2,000	-	2,000	-	-	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	-	<100	50	30	20	<1,000	-	<1,000	-	-	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	-	<100	30	30	<10	<1,000	-	<1,000	-	-	<50
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	-	42,500	<10	<10	<10	52,600	-	52,600	-	-	<10
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	-	26,000	<10	<10	<10	30,600	-	30,600	-	-	<10
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	-	40,700	<100	<100	<100	61,800	-	61,800	-	-	<5
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	-	16,000	20	20	<10	34,300	-	34,300	-	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	-	3,670	40	40	<10	64,000	-	64,000	-	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	-	2,730	90	90	<10	80,500	-	80,400	-	-	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	-	26,000	90	90	<10	37,700	-	37,600	-	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	-	1,080	<10	<10	<10	2,100	-	2,100	-	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	-	370	<10	<10	<10	1,000	-	1,000	-	-	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	-	880	60	60	<10	13,000	-	12,900	-	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	-	990	<10	<10	<10	2,000	-	2,000	-	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	-	1,000	<10	<10	<10	3,800	-	3,800	-	-	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	-	900	20	20	<10	7,100	-	7,100	-	-	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	-	1,250	<10	<10	<10	1,500	-	1,500	-	-	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	-	1,320	<10	<10	<10	2,800	-	2,800	-	-	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	-	820	<10	<10	<10	5,200	-	5,200	-	-	<5
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	8,650	<10	<10	<10	13,200	-	13,200	-	-	<5
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	-	7,320	30	30	<10	11,600	-	11,600	-	-	<5
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	6,940	<10	<10	<10	10,200	-	10,200	-	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Nitrogen (Organic)	Nitrogen (Total Oxidised)	Reactive Phosphorus as P	Ammonia as N	Nitrite + Nitrate as N	Nitrate (as NO3-N)	Nitrite (as NO2-N)	Nitrogen (Total)	Phosphorus	Total Kjeldahl Nitrogen (TKN)	Phosphorus total	Phosphate total (P)	1,2,4-trimethylbenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	100	10	100			5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2					900									
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													900				1,720			140		
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	6,620	10	10	<10	11,500	-	11,500	-	-	<5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	-	120	2,670	2,670	<10	5,000	-	2,300	-	-	<5
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	240	<10	<10	<10	800	-	800	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	-	3,980	20	20	<10	4,200	-	4,200	-	-	<5
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	-	3,890	4,180	4,180	<10	9,000	-	4,800	-	-	<5
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	60	450	100	350	800	-	400	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	-	60	590	530	60	4,600	-	4,000	-	-	<5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	-	90	<10	<10	<10	1,600	-	1,600	-	-	<5
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	340	<10	<10	<10	4,900	-	4,900	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	-	160	158,000	158,000	20	180,000	-	22,500	-	-	<5
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	140	183,000	183,000	10	183,000	-	400	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	-	230	<10	<10	<10	700	-	700	-	-	<5
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	150	70	70	<10	800	-	700	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	-	750	40	40	<10	1,500	-	1,500	-	-	<5
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	-	690	960	930	30	4,000	-	3,000	-	-	<5
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	-	660	60	30	30	1,400	-	1,300	-	-	<5
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	-	500	<10	<10	<10	1,000	-	1,000	-	-	<5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	-	640	10	10	<10	8,200	-	8,200	-	-	<5
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	-	630	10	10	<10	800	-	800	-	-	<5
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	-	380	<10	<10	<10	<1,000	-	<1,000	-	-	<5
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	-	1,300	30	30	<10	1,600	-	1,600	-	-	<5
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	-	800	10	10	<10	800	-	800	-	-	<5
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	-	460	20	20	<10	<1,000	-	<1,000	-	-	<5
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	1,390	100	<10	100	3,400	-	3,300	-	-	<5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	1,380	30	<10	80	4,800	-	4,800	-	-	<5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	<10	2,960	<10	<10	<10	3,000	<50	3,000	-	-	<5
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	<10	2,140	<10	<10	<10	-	<50	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	<10	760	-	270	100	-	130	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	<10	30	10	10	<10	-	40	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	<10	2,120	-	<10	<10	-	<20	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	<10	70	3,430	3,430	<10	3,800	<20	400	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	<10	50	-	<10	<10	-	30	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	<10	90	330	330	<10	1,100	680	800	-	-	<5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	<10	90	-	<10	<10	-	680	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	<10	40	<10	<10	10	-	70	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	<10	50	<10	<10	<10	-	30	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	<10	420	-	<10	<10	-	320	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	<10	790	20	20	<10	1,700	870	1,700	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	12,500	450	-	-	17,600	80	17,100	-	-	<5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	12,500	-	-	-	-	80	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	<10	2,960	-	<10	<10	-	<50	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	<10	2,960	<10	<10	<10	3,300	<50	3,300	-	-	<5
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	<10	2,100	<10	<10	<10	-	<50	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	<10	2,200	<10	<10	<10	-	<50	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	70	230	-	<10	<10	-	180	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	60	2,480	70	70	<10	-	500	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	<50	<10	40	20	20	9,200	80	9,200	-	-	<5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	<10	7,550	<10	<10	<10	8,100	80	8,100	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	<10	7,090	20	20	<10	-	40	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	30	6,740	50	50	<10	8,400	<50	8,300	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	<10	6,460	<10	<10	<10	6,000	<50	6,000	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	<10	30	-	10	<10	-	40	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	<10	<100	10	10	<10	1,000	<50	1,000	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Nitrogen (Organic)	Nitrogen (Total Oxidised)	Reactive Phosphorus as P	Ammonia as N	Nitrite + Nitrate as N	Nitrate (as NO3-N)	Nitrite (as NO2-N)	Nitrogen (Total)	Phosphorus	Total Kjeldahl Nitrogen (TKN)	Phosphorus total	Phosphate total (P)	1,2,4-trimethylbenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	100	10	100			5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2					900									
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													900				1,720			140		
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	<100	40	<100	<100	<100	<200	<100	<200	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	<10	40	<10	<10	<10	<200	110	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	<10	30	50	50	<10	<200	<20	<200	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	<10	30	<10	<10	<10	<200	<20	<200	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	1,060	70	70	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	<10	1,220	20	20	<10	1,800	170	1,800	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	<10	1,220	20	<10	20	1,200	100	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	<10	1,140	<10	<10	<10	1,600	<20	1,600	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	<10	940	70	70	<10	1,100	120	1,000	-	370	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	50	2,940	250	250	<10	-	40	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	60	2,820	10	10	<10	4,000	130	4,000	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	50	3,730	130	130	<10	4,300	80	4,200	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	120	3,700	3,250	3,250	<10	8,400	190	5,100	-	590	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	<10	60	20	20	<10	-	80	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	<10	60	20	20	<10	200	140	200	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	<10	30	40	40	<10	400	280	400	-	850	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	80	4,230	30	30	<10	-	<100	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	220	4,520	<10	<10	<10	6,600	310	6,600	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	130	4,680	<10	<10	<10	6,000	160	6,000	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	120	5,460	20	20	-	5,500	160	5,500	-	490	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	-	100	60	60	<10	2,300	-	2,200	-	-	<5
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	140	20	10	10	2,000	-	2,000	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	<10	20	60	60	<10	<200	<20	<200	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	<10	<10	20	20	<10	<200	<20	<200	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	<10	40	20	20	<10	<200	<20	<200	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	<10	<10	20	20	<10	<200	<20	<200	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	40	2,180	140	140	<10	-	40	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	50	3,160	<10	<10	<10	3,600	60	3,600	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	40	2,550	90	90	<10	3,700	60	3,600	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	40	3,060	10	10	<10	3,300	50	3,300	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	20	90	490	160	330	-	30	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	30	<10	230	230	<10	800	70	600	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	20	<10	480	480	<10	700	30	200	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	170	410	150	120	30	3,200	520	3,100	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	<100	6,280	<10	<10	<10	5,700	<100	5,700	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	20	6,370	30	10	20	6,700	<50	6,700	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	30	6,460	80	80	<10	6,200	<50	6,100	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	<10	6,470	<10	<10	<10	6,700	<50	6,700	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	-	-	5,110	40	40	-	4,900	50	4,900	-	-	<5
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	<10	4,320	<10	<10	<10	4,600	70	4,600	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	<10	4,930	20	20	<10	4,400	<50	4,400	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	<10	3,960	50	50	<10	-	80	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	<10	4,530	60	60	<10	4,300	<50	4,200	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	<10	4,500	40	40	<10	4,700	<50	4,700	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	<100	270	<100	<100	<100	-	<100	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	<100	350	<100	<100	<100	1,100	210	1,100	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	<10	130	90	90	<10	-	120	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	<10	300	110	110	<100	1,100	<50	1,000	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	<10	200	50	30	20	<500	<50	<500	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	<10	500	20	<10	20	700	80	700	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	<10	620	150	140	10	800	100	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	<10	400	20	20	<10	500	<50	500	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	<10	310	-	<10	<10	<500	60	<500	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	<10	2,540	<10	<10	<10	2,600	90	2,600	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	<10	1,520	160	110	50	2,200	30	2,000	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	<10	1,170	120	120	<10	2,100	30	2,000	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	<10	1,590	100	100	<10	2,300	<50	2,200	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	<10	3,150	30	30	<10	-	<20	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	<10	3,400	60	60	<10	4,000	20	3,900	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	<10	2,110	50	<10	50	2,600	<20	2,500	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	<10	2,340	80	80	<10	2,700	<50	2,600	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Nitrogen (Organic)	Nitrogen (Total Oxidised)	Reactive Phosphorus as P	Ammonia as N	Nitrite + Nitrate as N	Nitrate (as NO3-N)	Nitrite (as NO2-N)	Nitrogen (Total)	Phosphorus	Total Kjeldahl Nitrogen (TKN)	Phosphorus total	Phosphate total (P)	1,2,4-trimethylbenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	100	10	100			5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2					900									
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													900				1,720			140		
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	20	330	300	30	1,100	-	800	-	-	<5
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	80	20	20	<10	800	-	800	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	70	50	50	<10	800	-	700	-	-	<5
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	<10	5,340	<10	<10	<10	5,000	110	5,000	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	<10	3,180	10	10	<10	4,600	60	4,600	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	<10	3,880	<10	<10	<10	4,500	<50	4,500	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	<10	3,920	70	70	<10	4,100	<20	4,000	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	<10	4,690	80	80	<10	4,900	50	4,800	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	<10	870	190	160	30	1,700	20	1,500	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	<10	770	<10	<10	<10	1,400	10	1,400	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	10	760	100	<10	100	1,400	70	1,300	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	40	1,300	<50	<20	<20	600	60	600	-	-	<1
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	-	<10	970	<50	<20	<20	900	20	900	-	-	<1
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	<50	620	<50	<20	<20	-	-	<200	-	-	<1
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	<50	620	<50	<20	<20	<200	<500	-	-	-	<1
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	20	880	<50	<20	<20	-	-	1,500	-	-	<1
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	<50	190	<50	<20	<20	-	-	<200	-	-	<1
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	20	840	-	<20	<20	-	-	-	-	-	<1
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	<50	80	<50	<20	<20	-	-	<200	-	-	<1
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	-	120	<10	<10	<10	2,100	-	2,100	-	-	<5
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	180	10	10	<10	4,500	-	4,500	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	<50	150	<50	<20	<20	<200	3,700	-	-	-	<1
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	<50	150	<50	<20	<20	-	-	<200	-	-	<1
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	<10	1,200	<50	<20	<20	<200	20	<200	-	-	<1
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	40	30	<50	<20	<20	<200	190	<200	-	-	<1
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	<10	-	590	-	<10	<10	800	-	800	70	-	<5
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	550	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	-	500	<100	<100	<10	2,300	-	2,300	-	-	<5
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	-	850	<10	<10	<10	9,300	-	9,300	-	-	<5
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	-	450	<10	<10	<10	8,100	-	8,100	-	-	<5
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	630	<10	<10	<10	2,200	-	2,200	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	-	540	<10	<10	<10	800	-	800	-	-	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	<10	1,310	630	630	<10	2,300	100	1,700	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	1,230	2,200	2,200	-	3,800	80	1,600	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	<10	840	320	320	<10	1,600	80	1,300	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	60	200	460	310	150	1,400	340	900	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	40	<100	30	30	<10	<500	120	<500	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	440	120	20	20	<10	<500	90	<500	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	-	840	80	60	20	8,000	-	7,900	-	-	<5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	1,020	210	210	<10	6,100	-	5,900	-	-	<5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	-	520	420	420	<10	2,800	-	2,400	-	-	<5
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	13,800	20	20	<10	24,300	-	24,300	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	-	2,060	<10	<10	30	7,900	-	7,900	-	-	<5

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Nitrogen (Organic)	Nitrogen (Total Oxidised)	Reactive Phosphorus as P	Ammonia as N	Nitrite + Nitrate as N	Nitrate (as NO3-N)	Nitrite (as NO2-N)	Nitrogen (Total)	Phosphorus	Total Kjeldahl Nitrogen (TKN)	Phosphorus total	Phosphate total (P)	1,2,4-trimethylbenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			10	10	10	10	10	100	10	100			5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2					900									
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672													900				1,720			140		
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	510	550	50	40	10	<1,000	<1,000	<1,000	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	40	230	-	<10	<10	<1,000	<50	<1,000	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	170	<10	480	420	60	1,700	340	1,200	-	1,040	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	70	330	<10	-	-	1,500	420	1,500	-	-	<5
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	<10	80	<10	<10	<10	400	<10	400	-	-	<5
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<200	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	50	20	<50	<20	<20	<200	70	<200	-	-	<1
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	<50	160	<50	<20	<20	600	1,300	600	-	-	<1
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	-	30	130	-	40	<20	-	-	-	-	-	<1
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	-	<10	900	<10	<10	<10	1,500	<50	1,500	-	-	<5
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	<10	690	<10	<10	<10	1,300	-	1,300	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	-	1,020	<100	<100	<10	2,700	-	2,700	-	-	<5
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	860	650	650	<10	1,800	-	1,200	-	-	<5
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	-	-	90	<50	30	<20	-	-	<200	-	-	<1
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	<50	130	<50	<20	<20	-	-	800	-	-	<2
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	-	90	<10	<10	<10	400	-	400	-	-	<5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	80	<10	<10	<10	600	-	600	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	90	630	630	<10	2,200	-	1,600	-	-	<5
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	100	640	640	<10	1,800	-	1,200	-	-	<5
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	90	240	240	<10	1,200	-	1,000	-	-	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

												Monocylic aromatic hydrocarbons									
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-trimethylbenzene	Isopropylbenzene	Styrene	Total MAH	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (TOPA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (TOPA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (TOPA)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (TOPA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5		5	5	5	5	5				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			30											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<1	<1	<1	<3	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<10	<10	<10	-	<10	<10	<10	<10	<10	-	-	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<10	<10	<10	-	<10	<10	<10	<10	<10	-	-	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<10	<10	<10	-	<10	<10	<10	<10	<10	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<10	<10	-	<10	<10	<10	<10	<10	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<10	<10	<10	-	<10	<10	<10	<10	<10	-	-	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-trimethylbenzene	Isopropylbenzene	Styrene	Total MAH	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (TOPA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (TOPA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (TOPA)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (TOPA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5		5	5	5	5	5				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			30											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<50	<50	<50	-	<50	<50	<50	<50	<50	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<50	<50	<50	-	<50	<50	<50	<50	<50	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<50	<50	<50	-	<50	<50	<50	<50	<50	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<50	<50	<50	-	<50	<50	<50	<50	<50	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<20	<20	<20	-	<20	<20	<20	<20	<20	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<50	<50	<50	-	<50	<50	<50	<50	<50	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<50	<50	<50	-	<50	<50	<50	<50	<50	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<50	<50	<50	-	<50	<50	<50	<50	<50	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<10	<10	<10	-	<10	<10	<10	<10	<10	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<10	<10	<10	-	<10	<10	<10	<10	<10	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-trimethylbenzene	Isopropylbenzene	Styrene	Total MAH	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (TOPA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (TOPA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (TOPA)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (TOPA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5		5	5	5	5	5				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			30											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-trimethylbenzene	Isopropylbenzene	Styrene	Total MAH	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (TOPA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (TOPA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (TOPA)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (TOPA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5		5	5	5	5	5				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			30											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-trimethylbenzene	Isopropylbenzene	Styrene	Total MAH	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (TOPA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (TOPA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (TOPA)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (TOPA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5		5	5	5	5	5				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			30											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<1	<1	<1	<3	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<1	<1	<1	<3	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	<1	<3	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	<1	<3	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<1	<1	<1	<3	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<1	<1	<1	49	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<1	<1	<1	4	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<1	<1	<1	8	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<1	<1	<1	3	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<1	<1	<1	3	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<1	<1	<1	<3	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<1	<1	<1	<3	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-trimethylbenzene	Isopropylbenzene	Styrene	Total MAH	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (TOPA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (TOPA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (TOPA)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (TOPA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	5	5	5		5	5	5	5	5				
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			30											
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<1	<1	<1	<3	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<1	<1	<1	5	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<1	<1	<1	<3	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<1	<1	<1	<3	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<2	<2	<2	78	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	<5	<5	<5	-	<5	<5	<5	<5	<5	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			PFAS TOPA												Nitroaromatics							
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-Methyl perfluorooctane sulfonamidoacetic acid (TOPA)	Perfluorooctane sulfonamide (FOSA) (TOPA)	Post-Perfluorohexadecanoic acid (PFHxDA) (TOPA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA) TOPA	Perfluoropentanesulfonic acid (TOP)	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Penconazole*	Sodium Acifluorfen	2,2,4-Trimethylpentane	Tetradecane	Acetophenone
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/m3	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1						2	2	2					2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<0.05	<0.05	-	-	<0.001	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	-	<2	<2	<2	-	-	-	-	204
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-Methyl perfluorooctane sulfonamidoacetic acid (TOPA)	Perfluorooctane sulfonamide (FOSA) (TOPA)	Post-Perfluorohexadecanoic acid (PFHxDA) (TOPA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA) TOPA	Perfluoropentanesulfonic acid (TOP)	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Penconazole*	Sodium Acifluorfen	2,2,4-Trimethylpentane	Tetradecane	Acetophenone
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/m3	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1						2	2	2					2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-Methyl perfluorooctane sulfonamidoacetic acid (TOPA)	Perfluorooctane sulfonamide (FOSA) (TOPA)	Post-Perfluorohexadecanoic acid (PFHxDA) (TOPA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA) TOPA	Perfluoropentanesulfonic acid (TOP)	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Penconazole*	Sodium Acifluorfen	2,2,4-Trimethylpentane	Tetradecane	Acetophenone
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/m3	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1						2	2	2					2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-Methyl perfluorooctane sulfonamidoacetic acid (TOPA)	Perfluorooctane sulfonamide (FOSA) (TOPA)	Post-Perfluorohexadecanoic acid (PFHxDA) (TOPA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA) TOPA	Perfluoropentanesulfonic acid (TOP)	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Penconazole*	Sodium Acifluorfen	2,2,4-Trimethylpentane	Tetradecane	Acetophenone
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/m3	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1						2	2	2					2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	0.0119	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-Methyl perfluorooctane sulfonamidoacetic acid (TOPA)	Perfluorooctane sulfonamide (FOSA) (TOPA)	Post-Perfluorohexadecanoic acid (PFHxDA) (TOPA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA) TOPA	Perfluoropentanesulfonic acid (TOP)	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Penconazole*	Sodium Acifluorfen	2,2,4-Trimethylpentane	Tetradecane	Acetophenone
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/m3	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1						2	2	2					2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<0.005	<0.005	-	<0.001	<0.001	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	0.0012	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<0.05	<0.05	-	<0.001	<0.001	<5	<5	<5	-	-	-	-	<5
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	<0.001	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	-	<0.001	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	<0.001	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<0.005	<0.005	-	-	<0.001	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	<0.001	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<0.05	<0.05	-	<0.001	<0.001	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<0.05	<0.05	-	0.0029	<0.001	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-Methyl perfluorooctane sulfonamidoacetic acid (TOPA)	Perfluorooctane sulfonamide (FOSA) (TOPA)	Post-Perfluorohexadecanoic acid (PFHxDA) (TOPA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA) TOPA	Perfluoropentanesulfonic acid (TOP)	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Penconazole*	Sodium Acifluorfen	2,2,4-Trimethylpentane	Tetradecane	Acetophenone
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/m3	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1						2	2	2					2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<0.05	<0.05	-	<0.001	<0.001	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	-	-	<0.001	-	<5	<5	<5	-	-	-	-	<5
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	-	-	<0.001	-	<5	<2	<2	-	-	-	-	<2
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	-	0.04	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Other																Particle Size	PCBs		
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Caprolactam	Butyric Acid	Carbon Monoxide	Corexit 9527	Glycidaldehyde	Methyl Mercaptan	Nitrofurantoin	Silica (SiO2)	Tebuconazole	Coarse Gravel 19-26.5mm	PCBs (Sum of total)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOS_
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1											1		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Caprolactam	Butyric Acid	Carbon Monoxide	Corexit 9527	Glycidaldehyde	Methyl Mercaptan	Nitrofurantoin	Silica (SiO2)	Tebuconazole	Coarse Gravel 19-26.5mm	PCBs (Sum of total)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOS_
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1											1		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Caprolactam	Butyric Acid	Carbon Monoxide	Corexit 9527	Glycidaldehyde	Methyl Mercaptan	Nitrofurantoin	Silica (SiO2)	Tebuconazole	Coarse Gravel 19-26.5mm	PCBs (Sum of total)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOS_
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1											1		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	<1	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Caprolactam	Butyric Acid	Carbon Monoxide	Corexit 9527	Glycidaldehyde	Methyl Mercaptan	Nitrofurantoin	Silica (SiO2)	Tebuconazole	Coarse Gravel 19-26.5mm	PCBs (Sum of total)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOS_
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1											1		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Caprolactam	Butyric Acid	Carbon Monoxide	Corexit 9527	Glycidaldehyde	Methyl Mercaptan	Nitrofurantoin	Silica (SiO2)	Tebuconazole	Coarse Gravel 19-26.5mm	PCBs (Sum of total)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOS_
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1											1		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	-	-	-	-	-	-	-	-	<0.05	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	<0.05	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	-	-	-	-	-	-	-	-	<0.05	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	<0.005
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Caprolactam	Butyric Acid	Carbon Monoxide	Corexit 9527	Glycidaldehyde	Methyl Mercaptan	Nitrofurantoin	Silica (SiO2)	Tebuconazole	Coarse Gravel 19-26.5mm	PCBs (Sum of total)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOS_
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1											1		
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	-	-	-	-	-	-	-	-	-	<0.05	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

Monitoring Zone	Location Code	Date	Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Perfluorooctanesulfonic acid - PFOS	Perfluorooctanoic acid - PFOA	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.002	0.0005	0.0005	0.0005	0.0005
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																0.00023						19
EPL #21672																						
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<0.0001	<0.01	<0.001	-	<0.001	<0.001	-	<0.001	<0.05	<0.01	<0.01	<0.01	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	0.0077	0.003	0.0016	<0.0005	0.016	<0.0005	0.002	0.0027	0.0037	0.0019	0.0008
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	0.0096	0.0042	0.0025	<0.0005	0.0126	<0.0005	0.002	0.0029	0.0045	0.0029	0.0011
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	0.124	0.0446	0.0274	<0.0005	0.0007	<0.0005	0.008	0.0131	0.062	0.0448	0.0168
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	0.0941	0.0349	0.0362	<0.0008	0.0059	<0.0008	<0.004	0.0048	0.0158	0.018	0.0344
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	0.0848	0.0552	0.0544	0.0017	0.0022	<0.0008	0.004	0.0065	0.0264	0.0343	0.0579
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	0.0144	0.0057	0.0059	0.0012	0.05	<0.0008	0.034	0.0094	0.0167	0.0075	0.0169
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	0.0135	0.0053	0.0058	0.0014	0.0494	<0.0008	0.032	0.0095	0.0167	0.0064	0.0165
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	<0.0016	0.0024	0.0096	0.0066	0.84	<0.0016	0.01	0.029	0.0258	0.0157	0.0563
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	<0.0016	0.0016	0.0085	0.0056	0.95	<0.0016	<0.008	0.02	0.0226	0.0115	0.0496
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	<0.0016	<0.0016	0.009	0.0078	0.881	<0.0016	<0.008	0.0205	0.0269	0.0101	0.0427
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	0.73	-	<0.1	<0.02	<0.02	<0.02	0.02
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	0.93	-	<0.1	<0.02	<0.02	<0.02	0.02
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	0.84	-	<0.1	<0.02	<0.02	<0.02	0.02
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	0.81	-	<0.1	<0.02	<0.02	<0.02	0.02
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	0.64	-	<0.1	<0.02	<0.02	<0.02	0.02
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	0.73	-	<0.1	<0.02	<0.02	<0.02	0.02
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	0.0124	0.0039	0.0056	<0.0005	0.0004	<0.0005	<0.002	0.0011	0.0027	0.002	0.0026
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	0.0142	0.0042	0.0056	<0.0005	0.0006	<0.0005	<0.002	0.0013	0.0033	0.0023	0.003
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	0.013	0.0039	0.0054	<0.0005	0.0005	<0.0005	<0.002	0.0016	0.003	0.0019	0.0027
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	<0.02	-	0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	<0.02	-	0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	0.05	<0.02	0.03
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	0.05	<0.02	0.03
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	0.03	-	0.01	-	<0.01	-	<0.1	<0.02	0.05	<0.02	0.04
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.004	<0.0008	<0.0008	<0.0008	<0.0008
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.004	<0.0008	<0.0008	<0.0008	<0.0008
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Perfluorooctanesulfonic acid - PFOS	Perfluorooctanoic acid - PFOA	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.002	0.0005	0.0005	0.0005	0.0005
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																0.00023						19
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	<0.0007	<0.0007	<0.0007	<0.0007	0.0016	<0.0007	<0.004	0.0016	0.0012	<0.0007	<0.0007
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	<0.0007	<0.0007	<0.0007	<0.0007	0.0016	<0.0007	<0.004	0.0016	0.0013	<0.0007	<0.0007
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	<0.0007	<0.0007	<0.0007	<0.0007	0.0081	<0.0007	<0.004	<0.0007	0.0064	<0.0007	0.0015
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.004	<0.0009	0.0017	<0.0009	<0.0009
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.004	<0.0009	0.0022	<0.0009	<0.0009
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.004	<0.0009	0.0074	<0.0009	0.001
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	<0.0007	<0.0007	0.0008	<0.0007	0.0044	<0.0007	<0.004	<0.0007	0.0012	<0.0007	0.0016
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	<0.0007	<0.0007	0.0008	<0.0007	0.0063	<0.0007	<0.004	<0.0007	0.0012	<0.0007	0.0019
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	<0.0009	<0.0009	<0.0009	<0.0009	0.002	<0.0009	<0.004	<0.0009	0.0012	<0.0009	0.0016
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	<0.0009	<0.0009	0.0009	<0.0009	0.0021	<0.0009	<0.004	<0.0009	0.0014	<0.0009	0.0016
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	0.0068	0.0026	0.0017	<0.0005	0.001	<0.0005	<0.002	0.0012	0.0041	0.003	0.0024
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	0.0058	0.0023	0.0015	<0.0005	0.0008	<0.0005	<0.002	0.001	0.0032	0.0026	0.0017
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	<0.0016	<0.0016	0.0112	<0.0016	0.43	<0.0016	0.02	0.0354	0.0475	0.0189	0.0427
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	<0.0016	0.0016	0.0069	<0.0016	0.296	<0.0016	0.012	0.0283	0.0326	0.0134	0.0293
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	<0.02	<0.02	<0.01	<0.02	0.34	<0.02	<0.1	<0.02	<0.02	<0.02	0.03
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	<0.02	<0.02	<0.01	<0.02	0.13	<0.02	<0.1	<0.02	<0.02	<0.02	0.02
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	0.03	<0.02	<0.01	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	0.03	<0.02	<0.01	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	<0.02	<0.02	<0.01	<0.02	0.24	<0.02	<0.1	<0.02	<0.02	<0.02	0.02
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.004	<0.0008	<0.0008	<0.0008	<0.0008
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	0.0011	<0.0008	<0.004	0.0014	0.0011	0.0009	0.0011
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.004	<0.0008	<0.0008	<0.0008	<0.0008
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	0.0939	0.0099	0.127	<0.0008	0.115	<0.0008	<0.004	0.506	0.808	0.145	0.286
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	-	0.076	<0.002	0.158	<0.002	0.117	<0.002	0.26	0.324	0.789	0.167	0.362
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	0.0876	0.0101	0.147	0.0082	0.117	0.0008	0.198	0.522	0.708	0.121	0.296
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	0.1	-	0.07	-	0.13	-	0.1	0.26	0.69	0.11	0.26

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Perfluorooctanesulfonic acid - PFOS	Perfluorooctanoic acid - PFOA	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.002	0.0005	0.0005	0.0005	0.0005
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																0.00023						19
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	0.04	-	0.06	-	0.11	-	<0.1	0.18	0.29	0.06	0.18
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	<0.02	-	0.03	-	<0.01	-	<0.1	<0.02	0.02	<0.02	0.04
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.003	<0.0006	<0.0006	<0.0006	<0.0006
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	<0.0005	<0.002	<0.0005	0.0029	<0.0005	0.0007
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	0.0016	<0.0008	<0.004	<0.0008	<0.0008	<0.0008	0.0012
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	0.0145	0.0104	0.0101	<0.0008	0.0015	<0.0008	<0.004	<0.0008	0.0077	0.0078	0.0145
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	<0.0005	<0.0005	0.001	<0.0005	0.0019	<0.0005	<0.002	<0.0005	0.002	<0.0005	0.0014
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	0.0012	<0.0008	<0.004	<0.0008	0.0013	<0.0008	0.0013
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	0.0002	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	0.03	<0.02	0.08	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Perfluorooctanesulfonic acid - PFOS	Perfluorooctanoic acid - PFOA	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.002	0.0005	0.0005	0.0005	0.0005
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																0.00023						19
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	0.0009	<0.001	<0.005	<0.001	0.001	<0.001	0.011
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Perfluorooctanesulfonic acid - PFOS	Perfluorooctanoic acid - PFOA	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.002	0.0005	0.0005	0.0005	0.0005
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																0.00023						19
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	0.03	-	<0.1	0.02	0.03	<0.02	<0.01
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	0.0004	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	0.0002	<0.001	<0.005	<0.001	<0.001	<0.001	0.001
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	0.002	0.0021	0.0034	0.0006	0.002
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<0.0001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	0.0005	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	<0.001	<0.001	<0.001	<0.001	<0.0003	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	<0.001	<0.001	<0.001	<0.001	0.0004	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	0.0003	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.005	<0.001	<0.001	<0.001	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	<0.001	<0.001	<0.001	<0.001	0.0003	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	0.0003	<0.01	<0.001	<0.001	<0.001	<0.001	0.0003	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	0.0002	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	0.0014	<0.0005	0.007	0.0021	0.0021	<0.0005	0.0006
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	0.0019	<0.01	<0.001	<0.001	<0.001	<0.001	0.0019	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	0.0002	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	0.001	<0.0005	0.001	<0.0005	0.0009	<0.0005	0.044	0.0036	0.0078	0.001	0.0048
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	0.0067	<0.0008	<0.004	<0.0008	0.0025	<0.0008	0.0015
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	0.001	<0.0008	<0.0008	<0.0008	0.0023	<0.0008	<0.004	<0.0008	<0.0008	<0.0008	<0.0008
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	<0.0005	<0.0005	0.0027	<0.0005	0.0067	<0.0005	<0.002	0.0046	0.0274	0.0061	0.0106
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	<0.0005	<0.0005	0.0034	<0.0005	0.0076	<0.0005	<0.002	0.0046	0.0379	0.0058	0.0107
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	<0.02	-	<0.01	-	0.02	-	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Perfluorooctanesulfonic acid - PFOS	Perfluorooctanoic acid - PFOA	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1			0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.002	0.0005	0.0005	0.0005	0.0005
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																0.00023						19
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	0.0002	<0.01	<0.001	<0.001	<0.001	<0.001	0.0002	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	0.027	0.009	0.024	<0.001	0.012	<0.001	<0.05	<0.01	0.03	<0.01	<0.01
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	<0.02	-	<0.01	-	0.05	-	<0.1	<0.02	0.02	<0.02	0.01
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	0.09	-	0.02	-	<0.01	-	<0.1	<0.02	0.04	0.03	0.01
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	0.09	-	0.02	-	<0.01	-	<0.1	<0.02	0.04	0.03	0.02
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	0.1	-	0.02	-	<0.01	-	<0.1	<0.02	0.04	0.04	<0.01

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

													Per and polyfluoroalkyl substances									
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluoro-n-hexadecanoic acid (PFHxDA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorononanesulfonic acid (PFNS)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (PFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<0.005	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	-	-	-	-	0.0048	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	-	-	-	-	0.0047	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	-	-	-	-	0.0472	0.0102	<0.0016	<0.0016	<0.0016	<0.0040	0.0064	<0.004	<0.004
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	0.0464	0.0139	<0.0016	<0.0016	<0.0016	<0.0040	0.0093	<0.004	<0.004
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	-	-	-	-	0.0381	0.009	<0.0016	<0.0016	<0.0016	<0.0040	0.0066	<0.004	<0.004
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	<0.005	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.005
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	-	<0.005	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.005
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluoro-n-hexadecanoic acid (PFHxDA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorononanesulfonic acid (PFNS)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (PFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	-	-	-	-	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0018	<0.0007	<0.002	<0.002
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	-	-	-	-	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0018	<0.0007	<0.002	<0.002
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	-	-	-	-	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0018	<0.0007	<0.002	<0.002
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	-	-	-	-	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0022	<0.0009	<0.002	<0.002
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	-	-	-	-	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0022	<0.0009	<0.002	<0.002
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	-	-	-	-	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0022	<0.0009	<0.002	<0.002
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	-	-	-	-	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0018	<0.0007	<0.002	<0.002
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	-	-	-	-	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0018	<0.0007	<0.002	<0.002
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	-	-	-	-	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0022	<0.0009	<0.002	<0.002
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	-	-	-	-	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0022	<0.0009	<0.002	<0.002
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	-	-	-	-	0.016	0.0106	<0.0016	<0.0016	<0.0016	<0.0040	0.0086	<0.004	<0.004
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	-	-	-	-	0.0115	0.0062	<0.0016	<0.0016	<0.0016	<0.0040	0.0059	<0.004	<0.004
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	-	-	-	-	0.0175	0.0059	<0.0008	<0.0008	<0.0008	<0.0019	0.0182	<0.002	<0.002
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	-	<0.005	-	-	0.021	0.011	<0.002	<0.002	<0.002	<0.005	0.01	<0.005	<0.005
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	-	-	-	-	0.007	0.0075	<0.0008	<0.0008	<0.0008	<0.0019	0.0104	<0.002	<0.002
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluoro-n-hexadecanoic acid (PFHxDA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorononanesulfonic acid (PFNS)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (PFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	-	-	-	-	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0016	<0.0006	<0.002	<0.002
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	<0.005	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<0.05	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluoro-n-hexadecanoic acid (PFHxDA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorononanesulfonic acid (PFNS)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (PFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	<0.005	-	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<0.05	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluoro-n-hexadecanoic acid (PFHxDA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorononanesulfonic acid (PFNS)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (PFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	<0.005	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<0.005	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	<0.005	-	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<0.005	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	0.006	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<0.005	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<0.005	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	0.011	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	0.007	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	0.007	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<0.005	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	<0.005	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<0.005	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	<0.005	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<0.05	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0020	<0.0008	<0.002	<0.002
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0020	<0.0008	<0.002	<0.002
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	0.0019	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.001	<0.001
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	-	-	-	-	0.0017	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.001	<0.001
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluoro-n-hexadecanoic acid (PFHxDA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorononanesulfonic acid (PFNS)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (PFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1		0.005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<0.05	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<0.05	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<0.005	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<0.005	-	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<0.05	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<0.005	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<0.005	-	0.009	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS (WA DER List)	Sum (PFHxS + PFOS)	Sum of PFASs (n=28)	Chlorobenzilate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	0.0005	0.0005	0.001	0.001	0.001	0.001	0.001	0.001		0.0003	0.0003	0.0003	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	<0.001	-	<0.001	<0.001	-	<0.005	<0.001	<0.005	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	0.0364	0.0176	0.0394	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	0.0381	0.0151	0.0423	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	0.297	0.0281	0.341	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.004	<0.001	<0.001	-	0.213	0.0421	0.248	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.27	0.0566	0.327	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.002	<0.001	<0.001	-	0.157	0.0559	0.168	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.002	<0.001	<0.001	-	0.152	0.0552	0.163	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<0.0016	<0.0016	<0.004	<0.004	<0.002	<0.002	<0.002	<0.002	-	0.986	0.85	1.06	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<0.0016	<0.0016	<0.004	<0.004	<0.002	<0.002	<0.002	<0.002	-	1.06	0.958	1.14	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<0.0016	<0.0016	<0.004	<0.004	<0.002	<0.002	<0.002	<0.002	-	0.99	0.89	1.05	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.75	0.73	-	<2
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.95	0.93	-	<2
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.86	0.84	-	<2
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.83	0.81	-	<2
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.66	0.64	-	<2
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.75	0.73	-	<2
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.002	<0.002	<0.002	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	0.0288	0.006	0.0327	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	-	0.0313	0.0062	0.0355	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	0.0301	0.0059	0.034	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.01	0.01	-	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.01	0.01	-	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.08	<0.01	-	<2
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.08	<0.01	-	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.13	0.01	-	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.002	<0.001	<0.001	-	0.002	<0.0008	0.002	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.002	<0.002	<0.002	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	<0.0008	<0.0008	<0.0008	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS (WA DER List)	Sum (PFHxS + PFOS)	Sum of PFASs (n=28)	Chlorobenzilate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	0.0005	0.0005	0.001	0.001	0.001	0.001	0.001	0.001		0.0003	0.0003	0.0003	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	-	-	-	-	<0.05	0.11	<0.05	<0.05	-	0.11	<0.01	-	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	-	-	-	-	<0.05	0.08	<0.05	<0.05	-	0.08	<0.01	-	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<0.0007	<0.0007	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.0044	0.0016	0.0044	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<0.0007	<0.0007	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.0045	0.0016	0.0045	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<0.0007	<0.0007	<0.002	<0.002	<0.001	0.016	<0.001	<0.001	-	0.032	0.0081	0.032	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<0.0009	<0.0009	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.0017	<0.0009	0.0017	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<0.0009	<0.0009	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.0022	<0.0009	0.0022	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<0.0009	<0.0009	<0.002	<0.002	<0.001	0.004	<0.001	<0.001	-	0.0124	<0.0009	0.0124	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<0.0007	<0.0007	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.008	0.0052	0.008	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<0.0007	<0.0007	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.0102	0.0071	0.0102	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<0.0009	<0.0009	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.0048	0.002	0.0048	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<0.0009	<0.0009	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.006	0.003	0.006	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	0.0202	0.0027	0.0228	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	0.0166	0.0023	0.0189	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<0.0016	<0.0016	<0.004	<0.004	<0.002	0.01	<0.002	<0.002	-	0.616	0.441	0.651	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<0.0016	<0.0016	<0.004	<0.004	<0.002	0.006	<0.002	<0.002	-	0.424	0.303	0.45	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.37	0.34	0.37	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.15	0.13	0.15	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.1	0.07	0.1	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.1	0.07	0.1	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.26	0.24	0.26	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	<0.0008	<0.0008	<0.0008	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.001	<0.001	<0.001	-	0.0066	0.0011	0.0066	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	<0.0008	<0.0008	<0.0008	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<0.0008	0.002	<0.002	<0.002	<0.001	0.061	0.002	<0.001	-	2.14	0.242	2.2	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<0.002	<0.002	<0.005	<0.005	<0.005	0.084	<0.005	<0.005	-	2.34	0.275	2.38	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.062	0.002	<0.001	-	2.26	0.264	2.3	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	-	-	-	-	<0.05	0.05	<0.05	<0.05	-	1.77	0.2	-	<2

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS (WA DER List)	Sum (PFHxS + PFOS)	Sum of PFASs (n=28)	Chlorobenzilate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	0.0005	0.0005	0.001	0.001	0.001	0.001	0.001	0.001		0.0003	0.0003	0.0003	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.92	0.17	-	<2
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.09	0.03	-	<2
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.01	0.01	-	<2
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<0.0006	<0.0006	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	<0.0006	<0.0006	<0.0006	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.009	<0.001	<0.001	-	0.0142	0.0016	0.0142	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.0028	0.0016	0.0028	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.01	<0.001	<0.001	-	0.0661	0.0116	0.0765	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	-	0.0103	0.0029	0.0103	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.005	<0.001	<0.001	-	0.0088	0.0012	0.0088	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<0.05	<0.05	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<2
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.11	0.08	0.11	<2
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<0.05	<0.05	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<2
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<0.05	<0.05	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<2
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<0.05	<0.05	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<2
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS (WA DER List)	Sum (PFHxS + PFOS)	Sum of PFASs (n=28)	Chlorobenzilate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	0.0005	0.0005	0.001	0.001	0.001	0.001	0.001	0.001		0.0003	0.0003	0.0003	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	-	<0.001	-	<0.001	<0.001	0.0119	0.0129	<0.001	0.0149	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS (WA DER List)	Sum (PFHxS + PFOS)	Sum of PFASs (n=28)	Chlorobenzilate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	0.0005	0.0005	0.001	0.001	0.001	0.001	0.001	0.001		0.0003	0.0003	0.0003	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	0.76	<0.05	<0.05	-	0.76	<0.01	-	<2
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	0.18	<0.05	<0.05	-	0.26	0.03	-	<2
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<0.005	<0.005	<0.005	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	-	<0.001	-	<0.001	<0.001	0.0012	<0.005	<0.001	<0.005	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	-	0.0141	<0.0003	0.0141	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	0.0065	<0.001	0.0065	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	0.0134	<0.001	0.0134	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	<0.001	-	<0.001	<0.001	-	0.0073	<0.001	0.0073	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<0.005	<0.005	<0.005	-	<0.001	-	<0.001	<0.001	<0.001	0.0073	<0.001	0.0073	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	0.0152	0.0014	0.0152	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	0.0029	0.0059	0.0019	0.0059	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	0.0312	<0.001	0.0312	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	-	0.0681	0.0019	0.0681	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.01	<0.001	<0.001	-	0.0207	0.0067	0.0207	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<0.0008	<0.0008	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	-	0.0033	0.0023	0.0033	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	0.0601	0.0094	0.0634	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	-	0.073	0.011	0.0761	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.02	0.02	-	<2
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Methylperfluorooctane esulfonamidoethanol (N-MeFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS (WA DER List)	Sum (PFHxS + PFOS)	Sum of PFASs (n=28)	Chlorobenzilate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	0.0005	0.0005	0.001	0.001	0.001	0.001	0.001	0.001		0.0003	0.0003	0.0003	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<0.005	<0.005	<0.005	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	0.016	0.105	0.036	0.123	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.08	0.05	-	<2
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.19	0.02	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.2	0.02	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.2	0.02	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Pesticides														Phthalates					
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbazole	Demeton-S-methyl	Fenamiphos	Methoprene	Parathion	Pirimiphos-methyl	Pirimphos-ethyl	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	0.5	0.5		2		0.5	10	2	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.004					1,000	3,700	26	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbazole	Demeton-S-methyl	Fenamiphos	Methoprene	Parathion	Pirimiphos-methyl	Pirimphos-ethyl	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	0.5	0.5		2		0.5	10	2	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.004					1,000	3,700	26	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2

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Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbazole	Demeton-S-methyl	Fenamiphos	Methoprene	Parathion	Pirimiphos-methyl	Pirimphos-ethyl	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	0.5	0.5		2		0.5	10	2	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.004					1,000	3,700	26	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	<0.5	<0.5	-	<2	-	<0.5	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2	-	<0.5	<10	<2	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2	-	<0.5	<10	<2	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<2	<0.5	<0.5	-	<2	-	<0.5	<10	<2	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<2	<0.5	<0.5	-	<2	-	<0.5	<10	<2	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbazole	Demeton-S-methyl	Fenamiphos	Methoprene	Parathion	Pirimiphos-methyl	Pirimphos-ethyl	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	0.5	0.5		2		0.5	10	2	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.004					1,000	3,700	26	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbazole	Demeton-S-methyl	Fenamiphos	Methoprene	Parathion	Pirimiphos-methyl	Pirimphos-ethyl	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	0.5	0.5		2		0.5	10	2	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.004					1,000	3,700	26	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	10	<2	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	<1	<10	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	-	-	-	-	-	-	<20	<5	<5	<5	<5	<5
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	<10	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	<1	<10	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	-	<20	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	-	-	<20	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-	<10	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	-	-	<20	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	<1	<10	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	-	-	<10	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	-	-	<2	<20	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	<1	<10	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	<2	<20	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	<1	<10	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<2	<0.5	<0.5	-	-	-	<0.5	-	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Carbazole	Demeton-S-methyl	Fenamiphos	Methoprene	Parathion	Pirimiphos-methyl	Pirimphos-ethyl	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	0.5	0.5		2		0.5	10	2	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						0.004					1,000	3,700	26	
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	-	-	<2	<20	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	<1	<10	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	-	-	-	-	<10	-	<5	<5	<5	<5	12	<5
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<2	-	-	-	-	-	<2	<10	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-	<20	-	<20	<2	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	-	-	-	<10	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<2	<0.5	<0.5	-	<2.0	-	<0.5	<10	<2	<2	<2	<2	<2
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

										Solvents												
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Carbon disulfide	Allyl chloride	Acetone	Propane Nitrile (Propionitrile)	2-hexanone (MBK)	Isophorone	Vinyl acetate	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	50	5				50	2	50	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<100	<100	<10	-	-	-	<100	<2	<100	<2	<2	<2	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<100	<100	<10	-	-	-	<100	<2	<100	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<100	<100	<10	-	-	-	<100	<2	<100	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<100	<100	<10	-	-	-	<100	<2	<100	<2	<2	<2	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<100	<100	<10	-	-	-	<100	<2	<100	<2	<2	<2	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	60	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	150	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	80	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	110	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Carbon disulfide	Allyl chloride	Acetone	Propane Nitrile (Propionitrile)	2-hexanone (MBK)	Isophorone	Vinyl acetate	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	50	5				50	2	50	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	70	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	80	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<500	<500	<50	-	-	-	<500	<2	<500	<2	<2	<2	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<500	<500	<50	-	-	-	<500	<2	<500	<2	<2	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<500	<500	<50	-	-	-	<500	<2	<500	<2	<2	<2	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<500	<500	<50	-	-	-	<500	<2	<500	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<200	<200	<20	-	-	-	<200	<2	<200	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<500	<500	<50	-	-	-	<500	<2	<500	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<500	<500	<50	-	-	-	<500	<2	<500	<2	<2	<2	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<500	<500	<50	-	-	-	<500	<2	<500	<2	<2	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<100	<100	<10	-	-	-	<100	<2	<100	<2	<2	<2	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<100	<100	<10	-	-	-	<100	<2	<100	<2	<2	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<50	<50	18	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<50	<50	15	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<50	<50	11	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	70	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	80	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Carbon disulfide	Allyl chloride	Acetone	Propane Nitrile (Propionitrile)	2-hexanone (MBK)	Isophorone	Vinyl acetate	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	50	5				50	2	50	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	60	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<50	<50	11	-	-	-	<50	<2	<50	<2	<2	<2	<2
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	70	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	90	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<50	<50	9	-	-	-	<50	<2	<50	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Carbon disulfide	Allyl chloride	Acetone	Propane Nitrile (Propionitrile)	2-hexanone (MBK)	Isophorone	Vinyl acetate	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	50	5				50	2	50	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

TETRA TECH COFFEY

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Carbon disulfide	Allyl chloride	Acetone	Propane Nitrile (Propionitrile)	2-hexanone (MBK)	Isophorone	Vinyl acetate	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	50	5				50	2	50	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	<1	<1	<1	<1	2	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<1	<1	<1	<1	<1	-	-	-	-	-	<5	<5	<5
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	<1	<1	<1	<1	2	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	<1	<1	<1	<1	2	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	<1	<1	<1	<1	2	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	<1	<1	<1	<1	2	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Carbon disulfide	Allyl chloride	Acetone	Propane Nitrile (Propionitrile)	2-hexanone (MBK)	Isophorone	Vinyl acetate	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	50	50	5				50	2	50	2	2	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	<1	<1	<1	<1	2	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<1	<1	<1	<1	<1	-	-	-	-	-	<5	<5	<5
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<1	<1	<1	<1	<1	-	-	-	-	-	<5	<2	<2
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	<2	<2	<2	<2	<2	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	<50	<50	<5	-	-	-	<50	-	<50	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			SVOC																			
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroisopropyl) ether	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2		2	2	2	2	2	2	2	4	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Monitoring Zone	Location Code	Date																				
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroisopropyl) ether	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2		2	2	2	2	2	2	2	4	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	2	<2	<4	<2
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroisopropyl) ether	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2		2	2	2	2	2	2	2	4	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroisopropyl) ether	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2		2	2	2	2	2	2	2	4	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroisopropyl) ether	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2		2	2	2	2	2	2	2	4	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	<5	-	-	<5	<5	-	<5	-	-	-	<5	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroisopropyl) ether	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2	2	2		2	2	2	2	2	2	2	4	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2														
AS2159 – 2009 Piling – Design and Installation																						
PFAS NEMP 2020 Freshwater 99%																						
EPL #21672																						
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	<5	-	-	<5	<5	-	<5	-	-	-	<5	-	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	<2	-	-	<2	<2	-	<2	-	-	-	<2	-	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

										Volatile Organic Compounds				
			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trinitrobenzene	Dibenz(a,j)acridine	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2		5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						80
AS2159 – 2009 Piling – Design and Installation														
PFAS NEMP 2020 Freshwater 99%														
EPL #21672														
Monitoring Zone	Location Code	Date												
Orchard Hills	BH-13303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	-	-	-	-	-
Orchard Hills	BH-13303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	-	-	-	-	-
Luddenham Road	BH207	30 Nov 2022	-	70,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
Luddenham Road	BH207	18 Jan 2023	-	172,000	-	<1	-	<0.1	-	-	-	-	-	-
Luddenham Road	BH209	30 Nov 2022	-	487,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
Luddenham Road	BH209	18 Jan 2023	-	460,000	-	<1	-	0.1	-	-	-	-	-	-
Orchard Hills	BH-A372	04 Aug 2022	-	-	4	-	<0.1	-	1	<2	-	<5	<5	<5
Orchard Hills	BH-A372-s	04 Aug 2022	-	-	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	EMW1	26 Jul 2022	-	29,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	EMW1	26 Jul 2022	-	32,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	EMW1	26 Jul 2022	-	331,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	GW01	29 Jul 2022	-	20,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	GW01	29 Jul 2022	-	97,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	GW02	29 Jul 2022	-	103,000	-	<1	-	0.2	-	<2	-	<10	<10	<10
St Marys	GW02	29 Jul 2022	-	104,000	-	<1	-	0.2	-	<2	-	<10	<10	<10
St Marys	MW1	26 Jul 2022	-	25,000	-	2	-	<0.1	-	<2	-	<10	<10	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	-	<10	<10	<10
St Marys	MW1	26 Jul 2022	-	24,000	-	2	-	<0.1	-	<2	-	<10	<10	<10
St Marys	MW1	28 Nov 2022	-	20,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	MW1	28 Nov 2022	-	12,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	MW1	28 Nov 2022	-	13,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	MW1	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	MW1	12 Dec 2022	-	14,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	MW1	12 Dec 2022	-	15,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
Northern Tunnels	SBT-BH-1023	04 Oct 2022	-	-	6	-	0.6	-	65	-	-	-	-	-
St Marys	SBT-BH-1233	09 Aug 2022	-	-	-	3	-	0.7	-	-	-	-	-	-
St Marys	SBT-CM-1020	26 Jul 2022	-	69,000	-	<1	-	0.4	-	<2	-	<5	<5	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	76,000	-	<1	-	0.4	-	<2	-	<5	<5	<5
St Marys	SBT-CM-1020	26 Jul 2022	-	70,000	-	<1	-	0.5	-	<2	-	<5	<5	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	36,000	-	<1	-	0.1	-	<2	-	<5	<5	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	40,000	-	<1	-	0.1	-	<2	-	<5	<5	<5
St Marys	SBT-CM-1020	28 Nov 2022	-	42,000	-	4	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	39,000	-	<1	-	0.1	-	-	-	<5	<5	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	32,000	-	<1	-	0.1	-	-	-	<5	<5	<5
St Marys	SBT-CM-1020	12 Dec 2022	-	40,000	-	<1	-	<0.1	-	-	-	<5	<5	<5
St Marys	SBT-CM-1022	01 Dec 2022	-	46,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-CM-1022	12 Dec 2022	-	53,000	-	<1	-	0.2	-	-	-	<5	<5	<5
St Marys	SBT-CM-1022	16 Jan 2023	-	30,000	-	<1	-	<0.1	-	-	-	-	-	-
Claremont Meadows	SBT-CM-1030	21 Dec 2022	-	1,640,000	-	<10	-	<1.0	-	<2	-	<5	<5	<5
Claremont Meadows	SBT-CM-1030	01 Feb 2023	-	1,600,000	-	<10	-	<1.0	-	<2	-	<5	<5	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	1,610,000	-	<10	-	1	-	<2	-	<5	<5	<5
Claremont Meadows	SBT-CM-1030	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SBT-GW-0001	20 Jan 2023	-	4,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-0001	22 Feb 2023	-	4,000	-	<1	-	<0.1	-	-	-	-	-	-
St Marys	SBT-GW-0001	16 Mar 2023	-	<1,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1001	01 Dec 2022	-	895,000	-	3	-	0.7	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1001	12 Dec 2022	-	985,000	-	3	-	1.8	-	-	-	-	-	-
St Marys	SBT-GW-1001	17 Jan 2023	-	1,110,000	-	<10	-	1.9	-	-	-	-	-	-
St Marys	SBT-GW-1002	02 Sep 2022	-	-	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1002	06 Sep 2022	-	-	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1002	16 Sep 2022	-	210,000	-	<1	-	0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1002	22 Nov 2022	-	169,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1002	12 Dec 2022	-	174,000	-	<1	-	<0.1	-	-	-	-	-	-
St Marys	SBT-GW-1002	17 Jan 2023	-	169,000	-	<1	-	<0.1	-	-	-	-	-	-
St Marys	SBT-GW-1005	25 Nov 2022	-	529,000	-	<1	-	0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1005	12 Dec 2022	-	724,000	-	<1	-	0.2	-	-	-	<5	<5	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trinitrobenzene	Dibenz(a,j)acridine	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2		5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						80
AS2159 – 2009 Piling – Design and Installation														
PFAS NEMP 2020 Freshwater 99%														
EPL #21672														
St Marys	SBT-GW-1005	17 Jan 2023	-	785,000	-	<1	-	0.2	-	-	-	-	-	-
St Marys	SBT-GW-1012	15 Mar 2023	-	428,000	-	2	-	0.2	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1012	29 Mar 2023	-	382,000	-	5	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	357,000	-	9	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1012	14 Apr 2023	-	516,000	-	7	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1013	15 Mar 2023	-	535,000	-	<1	-	0.2	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1013	29 Mar 2023	-	638,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1013	14 Apr 2023	-	632,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1014	15 Mar 2023	-	462,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1014	29 Mar 2023	-	552,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1014	14 Apr 2023	-	606,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,030,000	-	2	-	0.4	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	1,090,000	-	2	-	0.4	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	21 Oct 2022	-	781,000	-	<1	-	0.4	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,060,000	-	<1	-	0.4	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	1,050,000	-	<1	-	0.4	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	28 Oct 2022	-	346,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,220,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	348,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	16 Jan 2023	-	1,200,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	22 Feb 2023	-	1,100,000	-	2	-	0.1	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	80,000	-	<1	-	<0.1	-	-	-	-	-	-
St Marys	SBT-GW-1016	22 Feb 2023	-	1,260,000	-	<1	-	0.2	-	-	-	-	-	-
St Marys	SBT-GW-1016	16 Mar 2023	-	1,100,000	-	<10	-	<1.0	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	124,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1016	16 Mar 2023	-	1,360,000	-	<10	-	<1.0	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	609,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1017	21 Oct 2022	-	584,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	552,000	-	<1	-	0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1017	28 Oct 2022	-	589,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	608,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1017	25 Nov 2022	-	613,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	563,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1017	12 Dec 2022	-	651,000	-	<1	-	0.1	-	-	-	-	-	-
St Marys	SBT-GW-1018	26 Jul 2022	-	706,000	-	<10	-	<1.0	-	<2	-	<50	<50	<50
St Marys	SBT-GW-1018	26 Jul 2022	-	692,000	-	<10	-	<1.0	-	<2	-	<50	<50	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	819,000	-	<1	-	0.2	-	<2	-	<50	<50	<50
St Marys	SBT-GW-1018	17 Aug 2022	-	826,000	-	1	-	0.2	-	<2	-	<50	<50	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	840,000	-	2	-	0.1	-	<2	-	<20	<20	<20
St Marys	SBT-GW-1018	22 Aug 2022	-	791,000	-	1	-	0.1	-	<2	-	<50	<50	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	726,000	-	<1	-	0.2	-	<2	-	<50	<50	<50
St Marys	SBT-GW-1018	22 Aug 2022	-	762,000	-	1	-	0.2	-	<2	-	<50	<50	<50
St Marys	SBT-GW-1019	26 Jul 2022	-	52,000	-	4	-	<0.1	-	<2	-	<10	<10	<10
St Marys	SBT-GW-1019	26 Jul 2022	-	382,000	-	4	-	<0.1	-	<2	-	<10	<10	<10
St Marys	SBT-GW-1019	17 Aug 2022	-	375,000	-	26	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019	17 Aug 2022	-	658,000	-	19	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	964,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	877,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019	22 Aug 2022	-	584,000	-	5	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	1,040,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	466,000	-	2	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019_R	16 Sep 2022	-	998,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	1,000,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	922,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019_R	28 Nov 2022	-	957,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	968,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	988,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1019_R	12 Dec 2022	-	996,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1021	02 Sep 2022	-	-	-	24	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1021	06 Sep 2022	-	-	-	25	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1021	16 Sep 2022	-	16,000	-	23	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1021	18 Apr 2023	-	15,000	12	17	<0.1	<0.1	2	<2	-	<5	<5	<5

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trinitrobenzene	Dibenz(a,j)acridine	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2		5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						80
AS2159 – 2009 Piling – Design and Installation														
PFAS NEMP 2020 Freshwater 99%														
EPL #21672														
St Marys	SBT-GW-1021	04 May 2023	-	16,000	-	9	-	<0.1	-	<2	-	<5	<5	<5
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1024	07 Dec 2022	-	168,000	-	<1	-	0.2	-	<2	-	<5	<5	<5
Claremont Meadows	SBT-GW-1024	17 Jan 2023	-	160,000	-	<1	-	0.2	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	01 Dec 2022	-	626,000	-	2	-	<0.1	-	<2	-	<5	<5	<5
Claremont Meadows	SBT-GW-1031	15 Dec 2022	-	723,000	-	<10	-	<1.0	-	<2	-	<5	<5	<5
Claremont Meadows	SBT-GW-1031	17 Jan 2023	-	68,000	-	<1	-	<0.1	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SBT-GW-1031	09 Feb 2023	-	38,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
Orchard Hills	SBT-GW-1037	23 Nov 2022	-	210,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
Orchard Hills	SBT-GW-1037	13 Dec 2022	-	207,000	-	<1	-	0.2	-	-	-	-	-	-
Orchard Hills	SBT-GW-1042	04 Aug 2022	-	-	-	<1	-	0.1	-	<2	-	<5	<5	<5
Orchard Hills	SBT-GW-1042	23 Nov 2022	-	205,000	-	<1	-	0.2	-	<2	-	<5	<5	<5
Orchard Hills	SBT-GW-1042	13 Dec 2022	-	205,000	-	2	-	0.2	-	-	-	-	-	-
Orchard Hills	SBT-GW-1043	29 Nov 2022	-	216,000	-	<1	-	0.5	-	<2	-	<5	<5	<5
Orchard Hills	SBT-GW-1043	13 Dec 2022	-	198,000	-	<1	-	0.7	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	15 Sep 2022	-	-	-	<10	-	2.7	-	-	-	-	-	-
Orchard Hills	SBT-GW-1048	30 Sep 2022	-	1,460,000	-	<10	-	2.8	-	<2	-	<5	<5	<5
Orchard Hills	SBT-GW-1048	29 Nov 2022	-	1,350,000	-	<10	-	2.7	-	<2	-	<5	<5	<5
Orchard Hills	SBT-GW-1048	13 Dec 2022	-	1,410,000	-	<10	-	2.3	-	<2	-	<5	<5	<5
Orchard Hills	SBT-GW-1063	29 Nov 2022	-	238,000	-	3	-	<0.1	-	<2	-	<5	<5	<5
Orchard Hills	SBT-GW-1063	13 Dec 2022	-	317,000	-	3	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1232	04 Aug 2022	-	-	-	3	-	2.2	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1232	30 Aug 2022	-	1,780,000	-	3	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1233	15 Sep 2022	-	1,720,000	-	5	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1234	29 Jul 2022	-	1,900,000	-	1	-	1.7	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1234	30 Aug 2022	-	1,940,000	-	11	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1234	15 Sep 2022	-	1,940,000	-	12	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1803	01 May 2023	-	19,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SBT-GW-1803	04 May 2023	-	78,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A002	06 Sep 2019	-	812,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A002	18 Dec 2019	1,060,000	-	2	1	<0.1	<0.1	<2	-	-	-	-	-
St Marys	SMGW-BH-A002	24 Jan 2020	913,000	-	<2	<1	0.1	0.1	<2	-	-	-	-	-
St Marys	SMGW-BH-A002	06 Mar 2020	251,000	-	3	2	0.1	0.1	<1	-	-	-	-	-
St Marys	SMGW-BH-A002	20 Apr 2020	991,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-
St Marys	SMGW-BH-A002	27 Aug 2020	-	293,000	<1	<1	0.2	0.2	<1	-	-	-	-	-
St Marys	SMGW-BH-A002	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011-1	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	05 Sep 2019	-	69,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
Northern Tunnels	SMGW-BH-A011S	06 Sep 2019	69,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	18 Dec 2019	68,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Jan 2020	69,000	-	2	1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	20 Apr 2020	109,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A011S	27 Aug 2020	-	64,000	4	4	<0.1	<0.1	3	-	-	-	-	-
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	-	94,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
Northern Tunnels	SMGW-BH-A012	05 Sep 2019	94,000	-	<1	<1	<0.1	<0.1	<1	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	361,000	-	2	2	<0.1	<0.1	<1	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	05 Sep 2019	-	631,000	-	2	-	<0.1	-	<2	-	<5	<5	<5
Orchard Hills	SMGW-BH-A017	18 Dec 2019	665,000	-	4	4	<0.1	<0.1	<1	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Jan 2020	681,000	-	3	5	<0.1	<0.1	<1	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	20 Apr 2020	35,000	-	1	1	<0.1	<0.1	<1	-	-	-	-	-
Orchard Hills	SMGW-BH-A017	25 Aug 2020	-	83,000	3	2	<0.1	<0.1	4	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	1,000	1,000	<1	<1	<0.1	<0.1	<1	<2	-	<5	<5	<5
Northern Tunnels	SMGW-BH-A019	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	30 Jul 2020	-	588,000	12	7	0.1	<0.1	15	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Aug 2020	-	-	-	-	-	-	-	<2	-	<5	<5	<5
Northern Tunnels	SMGW-BH-A019A	25 Aug 2020	-	570,000	11	9	<0.1	<0.1	3	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	07 Oct 2020	-	539,000	3	3	<0.1	<0.1	7	-	-	-	-	-
Northern Tunnels	SMGW-BH-A019A	27 Nov 2020	-	506,000	6	2	<0.1	<0.1	13	-	-	-	-	-
St Marys	SMGW-BH-A102	06 Mar 2020	251,000	-	3	2	<0.1	<0.1	<3	-	-	-	-	-
St Marys	SMGW-BH-A102	05 Jun 2020	-	257,000	3	3	<0.1	<0.1	<1	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trinitrobenzene	Dibenz(a.j)acridine	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2		5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						80
AS2159 – 2009 Piling – Design and Installation														
PFAS NEMP 2020 Freshwater 99%														
EPL #21672														
St Marys	SMGW-BH-A102	29 Jun 2020	-	296,000	2	2	<0.1	<0.1	<1	-	-	-	-	-
St Marys	SMGW-BH-A102	29 Jul 2020	-	317,000	2	1	<0.1	<0.1	<1	-	-	-	-	-
St Marys	SMGW-BH-A102	27 Aug 2020	-	278,000	4	2	<0.1	<0.1	3	-	-	-	-	-
St Marys	SMGW-BH-A102	15 Feb 2021	-	260,000	3	2	<0.1	<0.1	<1	-	-	-	-	-
St Marys	SMGW-BH-A102	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A103	26 May 2020	-	570,000	2	2	-	-	2	-	-	-	-	-
St Marys	SMGW-BH-A103	01 Jul 2020	-	549,000	3	1	<0.1	<0.1	4	-	-	-	-	-
St Marys	SMGW-BH-A103	29 Jul 2020	-	468,000	1	<1	<0.1	<0.1	2	-	-	-	-	-
St Marys	SMGW-BH-A103	25 Aug 2020	-	407,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-
St Marys	SMGW-BH-A103	17 Feb 2021	-	321,000	<1	1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	26 May 2020	-	170,000	2	2	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	01 Jul 2020	-	156,000	3	2	<0.1	<0.1	1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	25 Aug 2020	-	166,000	2	2	<0.1	<0.1	2	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105	16 Feb 2021	-	174,000	1	1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	26 May 2020	-	36,000	2	1	<0.1	<0.1	3	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	25 Aug 2020	-	36,000	2	<1	<0.1	<0.1	2	-	-	-	-	-
Northern Tunnels	SMGW-BH-A105S	16 Feb 2021	-	28,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	26 May 2020	-	388,000	3	3	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	29 Jun 2020	-	363,000	2	3	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	25 Aug 2020	-	298,000	4	2	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	16 Feb 2021	-	367,000	4	2	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107	01 Dec 2022	-	5,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
Northern Tunnels	SMGW-BH-A107	12 Dec 2022	-	11,000	-	<1	-	<0.1	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 May 2020	-	196,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	29 Jun 2020	-	190,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	27 Aug 2020	-	182,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A107S	15 Feb 2021	-	228,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	26 May 2020	-	320,000	1	1	<0.1	<0.1	25	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	30 Jun 2020	-	372,000	<1	2	<0.1	<0.1	1	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	25 Aug 2020	-	395,000	2	<1	<0.1	<0.1	2	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109	17 Feb 2021	-	379,000	2	<1	<0.1	<0.1	3	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	26 May 2020	-	4,000	2	2	<0.1	<0.1	2	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	30 Jun 2020	-	9,000	2	1	<0.1	<0.1	1	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	25 Aug 2020	-	20,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-
Claremont Meadows	SMGW-BH-A109S	17 Feb 2021	-	11,000	4	3	0.1	<0.1	3	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jun 2020	-	522,000	3	3	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	30 Jul 2020	-	493,000	2	2	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	20 Aug 2020	-	502,000	2	1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A111	17 Feb 2021	-	605,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 May 2020	-	548,000	<1	<1	<0.1	<0.1	3	<2	-	<5	<5	<5
Orchard Hills	SMGW-BH-A113	30 Jun 2020	-	553,000	<1	1	<0.1	<0.1	3	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	30 Jul 2020	-	555,000	<1	2	<0.1	<0.1	2	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	25 Aug 2020	-	513,000	<1	<1	<0.1	<0.1	5	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	27 Nov 2020	-	545,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-
Orchard Hills	SMGW-BH-A113	15 Feb 2021	-	614,000	1	<1	<0.1	<0.1	4	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	26 May 2020	-	1,100,000	3	2	<0.1	<0.1	3	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	29 Jun 2020	-	1,050,000	4	4	<0.1	<0.1	2	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	25 Aug 2020	-	990,000	2	2	<0.1	<0.1	2	-	-	-	-	-
Orchard Hills	SMGW-BH-A117	17 Feb 2021	-	964,000	4	3	0.2	0.1	1	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 May 2020	-	1,270,000	3	3	0.3	0.2	3	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jun 2020	-	1,050,000	3	4	0.3	0.4	1	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	29 Jul 2020	-	1,100,000	3	2	0.3	0.3	2	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	27 Aug 2020	-	1,020,000	3	3	0.3	0.2	<1	-	-	-	-	-
Orchard Hills	SMGW-BH-A117S	23 Feb 2021	-	1,210,000	4	3	0.2	0.3	3	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jun 2020	-	1,090,000	1	2	<0.1	<0.1	2	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	30 Jul 2020	-	334,000	<1	<1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	20 Aug 2020	-	260,000	2	2	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A121	17 Feb 2021	-	94,000	1	<1	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	26 May 2020	-	2,000	<1	<1	0.2	0.1	142	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	30 Jun 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	20 Aug 2020	-	<1,000	-	-	-	-	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	17 Feb 2021	-	2,000	1	<1	<0.1	<0.1	20	-	-	-	-	-

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trinitrobenzene	Dibenz(a,j)acridine	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2		5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						80
AS2159 – 2009 Piling – Design and Installation														
PFAS NEMP 2020 Freshwater 99%														
EPL #21672														
Northern Tunnels	SMGW-BH-A122	20 Jan 2023	-	7,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
Northern Tunnels	SMGW-BH-A122	22 Feb 2023	-	6,000	-	<1	-	<0.1	-	-	-	-	-	-
Northern Tunnels	SMGW-BH-A122	16 Mar 2023	-	7,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
Northern Tunnels	SMGW-BH-A123	28 May 2020	-	493,000	2	2	<0.1	<0.1	2	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	01 Jul 2020	-	403,000	4	2	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	30 Jul 2020	-	402,000	3	2	<0.1	<0.1	1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	20 Aug 2020	-	371,000	2	2	<0.1	<0.1	<1	-	-	-	-	-
Northern Tunnels	SMGW-BH-A123	17 Feb 2021	-	456,000	2	1	0.1	<0.1	2	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Dec 2020	-	5,000	2	1	<0.1	<0.1	2	-	-	-	-	-
St Marys	SMGW-BH-A202	02 Mar 2021	-	113,000	2	<1	<0.1	<0.1	4	-	-	-	-	-
St Marys	SMGW-BH-A202	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A202	26 May 2021	-	34,000	10	2	0.2	<0.1	12	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	11	8	<0.2	<0.2	3	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	18 Mar 2021	-	-	11	-	<0.2	-	1.9	-	-	-	-	-
St Marys	SMGW-BH-A302	22 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A302	01 Aug 2022	-	-	-	4	-	<0.1	-	<2	-	<5	<5	<5
Claremont Meadows	SMGW-BH-A304	12 Feb 2021	470,000	-	16	17	<0.2	<0.2	2	-	<5	-	-	-
Claremont Meadows	SMGW-BH-A304	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-
Claremont Meadows	SMGW-BH-A304	16 Mar 2021	-	-	14	-	<0.2	-	<1	-	-	-	-	-
Orchard Hills	SMGW-BH-A310	21 Apr 2021	1,100,000	-	-	3	-	-	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A310S	26 Apr 2021	1,000,000	-	1	1	-	-	8	-	-	-	-	-
Orchard Hills	SMGW-BH-A311	11 May 2021	980,000	-	3	2	<0.2	<0.2	1	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	26 Apr 2021	1,300,000	-	1	1	<0.2	-	1	-	-	-	-	-
Orchard Hills	SMGW-BH-A315	23 Nov 2022	-	871,000	-	2	-	<0.1	-	<2	-	<5	<5	<5
Orchard Hills	SMGW-BH-A315	13 Dec 2022	-	755,000	-	1	-	0.1	-	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	0.2	<0.2	1	-	-	-	-	-
Orchard Hills	SMGW-BH-A315S	16 Mar 2021	1,500,000	-	<1	2	-	<0.2	1	-	-	-	-	-
St Marys	SMGW-BH-A321	12 Feb 2021	820,000	-	7	10	<0.2	<0.2	3	-	-	-	-	-
St Marys	SMGW-BH-A321	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	18 Mar 2021	-	-	5.1	-	<0.2	-	1.2	-	-	-	-	-
St Marys	SMGW-BH-A321	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321	01 Aug 2022	-	-	-	<1	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A321S	18 Feb 2021	770,000	-	-	-	210,000	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	22 Feb 2021	-	-	-	<1	-	0.8	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	18 Mar 2021	-	-	2.2	-	2.4	-	8.5	-	-	-	-	-
St Marys	SMGW-BH-A321S	23 Apr 2021	-	-	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A321S	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A401	23 Nov 2021	-	973,000	-	2	-	0.2	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A401	21 Dec 2021	-	1,020,000	-	-	-	-	-	-	-	-	-	-
St Marys	SMGW-BH-A401	27 Jul 2022	-	1,010,000	-	3	-	0.4	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A401	15 Dec 2022	-	942,000	-	<10	-	<1.0	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A401	01 Feb 2023	-	933,000	-	3	-	0.3	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A401	02 Mar 2023	-	763,000	-	2	-	0.2	-	-	-	-	-	-
St Marys	SMGW-BH-A402	27 Jul 2022	-	1,020,000	-	4	-	0.4	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	-	<5	<5	<5
St Marys	SMGW-BH-A402	01 Aug 2022	-	-	-	2	-	<0.1	-	<2	-	<5	<5	<5
Luddenham Road	SMGW-BH-B106	30 Jun 2020	-	961,000	<1	2	0.4	0.4	3	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	31 Jul 2020	-	729,000	<1	<1	0.8	0.7	2	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	26 Aug 2020	-	892,000	1	<1	0.4	0.4	4	-	-	-	-	-
Luddenham Road	SMGW-BH-B106	15 Feb 2021	-	1,000,000	1	<1	0.5	0.3	4	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	30 Jun 2020	-	790,000	3	2	0.1	<0.1	8	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	26 Aug 2020	-	690,000	1	<1	0.2	0.1	3	-	-	-	-	-
Luddenham Road	SMGW-BH-B109	22 Feb 2021	-	790,000	<1	1	<0.1	0.2	<1	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	26 Aug 2020	-	1,070,000	3	2	0.2	<0.1	2	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	23 Feb 2021	-	732,000	1	<1	0.4	<0.1	<1	-	-	-	-	-
Luddenham Road	SMGW-BH-B120	28 Feb 2023	-	34,000	-	1	-	<0.1	-	<2	-	<5	<5	<5
Luddenham Road	SMGW-BH-B120	18 Apr 2023	-	59,000	4	2	0.2	<0.1	11	<2	-	<5	<5	<5
Luddenham Road	SMGW-BH-B123	16 Jan 2023	-	1,030,000	-	<1	-	<0.1	-	<2	-	<5	<5	<5
Luddenham Road	SMGW-BH-B123	22 Feb 2023	-	943,000	-	3	-	<0.1	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B123	16 Mar 2023	-	1,050,000	-	<10	-	<1.0	-	<2	-	<5	<5	<5

TETRA TECH COFFEY

Table D1: Preliminary Groundwater Results - St Marys Station to Orchard Hills Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	1,3,5-Trinitrobenzene	Dibenz(a,j)acridine	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	2		5	5	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2						80
AS2159 – 2009 Piling – Design and Installation														
PFAS NEMP 2020 Freshwater 99%														
EPL #21672														
Luddenham Road	SMGW-BH-B130	30 Jun 2020	-	544,000	4	2	<0.1	<0.1	2	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	30 Jul 2020	-	921,000	3	2	<0.1	<0.1	7	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	26 Aug 2020	-	889,000	2	<1	<0.1	<0.1	<1	-	-	-	-	-
Luddenham Road	SMGW-BH-B130	17 Feb 2021	-	661,000	2	1	0.2	<0.1	2	-	-	-	-	-
Luddenham Road	SMGW-BH-B308	02 Mar 2021	-	153,000	2	2	<0.1	<0.1	2	-	-	<5	<5	<5
Luddenham Road	SMGW-BH-B309	02 Mar 2021	-	46,000	<1	1	<0.1	<0.1	2	-	-	<5	<5	<5
Luddenham Road	SMGW-BH-B312	12 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	12 Feb 2021	720,000	-	7	8	0.5	0.5	6	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	17 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-
Luddenham Road	SMGW-BH-B312	16 Mar 2021	-	-	2	-	0.3	-	<1	-	-	-	-	-
Luddenham Road	SMGW-BH-B313	10 May 2021	1,400,000	-	3	2	-	-	-	-	<5	-	-	-
Luddenham Road	SMGW-BH-B319	02 Mar 2021	-	1,420,000	2	1	1.4	1.4	1	<2	-	<5	<5	<5
Luddenham Road	SMGW-BH-B319	26 May 2021	-	1,340,000	1	<1	0.1	<0.1	1	-	-	-	-	-
Luddenham Road	SMGW-BH-B319	28 Feb 2023	-	942,000	-	1	-	0.3	-	<2	-	<5	<5	<5
Luddenham Road	SMGW-BH-B319	18 Apr 2023	-	732,000	<1	2	0.4	0.1	1	<2	-	<5	<5	<5
Luddenham Road	SMGW-BH-B320	15 Apr 2021	800,000	-	3	2	<0.2	<0.2	1	-	<5	-	-	-
Luddenham Road	SMGW-BH-B325	27 Apr 2021	110,000	-	<1	<1	<0.2	<0.2	2	-	-	-	-	-
St Marys	SMGW-GW02	28 Nov 2022	-	124,000	-	<1	-	0.2	-	<2	-	<5	<5	<5
St Marys	SMGW-GW02	28 Nov 2022	-	126,000	-	<1	-	0.2	-	-	-	-	-	-
St Marys	SMGW-GW02	12 Dec 2022	-	240,000	-	<1	-	<0.1	-	-	-	<5	<5	<5
St Marys	SMGW-GW02	12 Dec 2022	-	211,000	-	<1	-	<0.1	-	-	-	<5	<5	<5
St Marys	SMGW-GW02	12 Dec 2022	-	256,000	-	<1	-	<0.1	-	-	-	<5	<5	<5

Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

			Magnesium	Magnesium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1,000	1,000	1	1	0.1	0.1	1	1	1	1	50	50	1	1	0.1	0.1	1	1	5
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.2	0.2			1.4	1.4			3.4	3.4	0.6	0.6	11	11	8
AS2159 – 2009 Piling – Design and Installation																					
Airport Regulations - Water pollution - accepted limits - fresh water					50	50	0.2	0.2	10	10	2	2	1,000	1,000	1	1	0.1	0.1	15	15	5
PFAS NEMP 2020 Freshwater 99%																					
WSA SBT - EPL 21672 (amended 10 May 2023)									1	1	1.4	1.4									15
Monitoring Zone	Location Code	Date																			
Aerotropolis	BH-D322	15 Mar 2021	330,000	-	<1	-	<0.2	-	<1	-	<1	-	340	-	<1	-	<0.01	-	2	-	<5
Aerotropolis	MW-01	22 Jul 2022	-	400,000	-	1	-	0.1	-	3	-	2	-	-	-	<1	-	<0.1	-	5	-
Aerotropolis	MW02	01 Dec 2022	-	448,000	-	<1	-	<0.1	-	<1	-	4	6,110	<50	-	<1	-	<0.1	-	2	-
Aerotropolis	MW02	13 Dec 2022	-	523,000	-	<1	-	<0.1	-	<1	-	2	24,400	3,040	-	<1	-	<0.1	-	4	-
Aerotropolis	MW02	18 Jan 2023	-	622,000	-	<1	-	<0.1	-	<1	-	<1	40,700	710	-	<1	-	<0.1	-	2	-
Aerotropolis	MW-02	22 Jul 2022	-	842,000	-	1	-	0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	5	-
Aerotropolis	MW-03	25 Jul 2022	-	809,000	-	10	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	16	-
Aerotropolis	MW-04	25 Jul 2022	-	402,000	-	41	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	9	-
Aerotropolis	MW-06	22 Jul 2022	-	659,000	-	<1	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	1	-
Aerotropolis	MW-201	22 Jul 2022	-	443,000	-	<1	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	<1	-
Aerotropolis	MW-202	22 Jul 2022	-	226,000	-	8	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	1	-
Aerotropolis	MW-203	22 Jul 2022	-	373,000	-	2	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	1	-
Aerotropolis	MW-205	25 Jul 2022	-	446,000	-	2	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	2	-
Aerotropolis	MW-206	25 Jul 2022	-	656,000	-	<1	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	1	-
Aerotropolis	MWO1	01 Dec 2022	-	1,200,000	-	<1	-	<0.1	-	<1	-	<1	770	<50	-	<1	-	<0.1	-	6	-
Aerotropolis	MWO1	13 Dec 2022	-	989,000	-	<1	-	<0.1	-	<1	-	<1	1,400	60	-	<1	-	<0.1	-	4	-
Aerotropolis	MWO1	18 Jan 2023	-	1,190,000	-	<1	-	<0.1	-	<1	-	2	2,860	<50	-	<1	-	<0.1	-	3	-
Aerotropolis	NUMAC16_IBC	26 Jul 2022	-	-	<1	-	<0.1	-	<1	-	1	-	-	-	<1	-	<0.1	-	<1	-	9
Aerotropolis	SBT-BH-4010	01 Feb 2023	-	13,000	-	<1	-	<0.1	-	<1	-	2	12,800	<50	-	<1	-	<0.1	-	<1	-
Aerotropolis	SBT-BH-4010	02 Mar 2023	-	10,000	-	1	-	<0.1	-	<1	-	3	1,420	90	-	<1	-	<0.1	-	1	-
Aerotropolis	SBT-BH-4010	29 Mar 2023	-	9,000	-	2	-	<0.1	-	<1	-	5	1,160	300	-	<1	-	<0.1	-	2	-
Aerotropolis	SBT-BH-4011	03 Aug 2022	-	-	5	-	0.3	-	23	-	95	-	-	-	12	-	<0.1	-	77	-	183
Aerotropolis	SBT-BH-4011	03 Aug 2022	-	-	38	-	1.7	-	222	-	547	-	-	-	167	-	<1.0	-	377	-	916
Aerotropolis	SBT-BH-4012	25 Jul 2022	-	-	207	-	2.1	-	487	-	827	-	-	-	320	-	<1.0	-	624	-	1,550
Aerotropolis	SBT-BH-4012	09 Aug 2022	-	-	138	-	1.8	-	452	-	1,020	-	-	-	366	-	<0.1	-	650	-	1,830
Aerotropolis	SBT-BH-4016	21 Jul 2022	-	-	14	-	0.2	-	66	-	204	-	-	-	67	-	<1.0	-	80	-	296
Aerotropolis	SBT-BH-4016	22 Jul 2022	-	-	7	-	0.2	-	24	-	100	-	-	-	16	-	<0.1	-	6	-	126
Aerotropolis	SBT-BH-4019	26 Jul 2022	-	-	<1	-	<0.1	-	8	-	7	-	-	-	4	-	<0.1	-	8	-	203
Aerotropolis	SBT-BH-4019	26 Jul 2022	-	-	118	-	3.1	-	647	-	2,010	-	-	-	576	-	<0.1	-	821	-	2,560
Aerotropolis	SBT-GW-4014	15 Sep 2022	-	399,000	-	2	-	<0.1	-	<1	-	<1	-	<50	-	<1	-	<0.1	-	5	-
Aerotropolis	SBT-GW-4014	01 Dec 2022	-	350,000	-	4	-	<0.1	-	<1	-	<1	60	280	-	<1	-	<0.1	-	4	-
Aerotropolis	SBT-GW-4014	13 Dec 2022	-	398,000	-	5	-	<0.1	-	<1	-	<1	4,050	240	-	<1	-	<0.1	-	5	-
Aerotropolis	SBT-GW-4017	02 Aug 2022	-	-	2	-	<0.1	-	15	-	25	-	-	-	12	-	<0.1	-	12	-	56
Aerotropolis	SBT-GW-4017	02 Aug 2022	-	-	<1	-	<0.1	-	3	-	<1	-	-	-	<1	-	<0.1	-	1	-	<5
Aerotropolis	SBT-GW-4017	03 Aug 2022	-	-	15	-	0.2	-	62	-	139	-	-	-	51	-	<1	-	68	-	222
Aerotropolis	SBT-GW-4017	03 Aug 2022	-	-	60	-	3.2	-	803	-	1,920	-	-	-	678	-	<1	-	946	-	3,010
Aerotropolis	SBT-GW-4017	03 Aug 2022	-	-	164	-	3.4	-	1,050	-	2,120	-	-	-	817	-	<1	-	1,290	-	3,740
Aerotropolis	SBT-GW-4017	15 Sep 2022	-	306,000	-	<1	-	<0.1	-	<1	-	<1	-	400	-	<1	-	<0.1	-	3	-
Aerotropolis	SBT-GW-4017	01 Dec 2022	-	420,000	-	1	-	<0.1	-	<1	-	<1	6,900	<50	-	<1	-	<0.1	-	6	-
Aerotropolis	SBT-GW-4017	13 Dec 2022	-	475,000	-	<1	-	<0.1	-	<1	-	<1	3,900	<50	-	<1	-	<0.1	-	8	-
Aerotropolis	SBT-GW-4019	15 Sep 2022	-	243,000	-	4	-	<0.1	-	<1	-	<1	-	1,010	-	<1	-	<0.1	-	4	-
Aerotropolis	SBT-GW-4019	01 Dec 2022	-	221,000	-	4	-	<0.1	-	<1	-	<1	8,780	780	-	<1	-	<0.1	-	3	-
Aerotropolis	SBT-GW-4019	13 Dec 2022	-	238,000	-	6	-	<0.1	-	<1	-	<1	2,140	610	-	<1	-	<0.1	-	5	-
Aerotropolis	SBT-GW-4021	01 Dec 2022	-	576,000	-	<1	-	<0.1	-	<1	-	<1	3,160	<50	-	<1	-	<0.1	-	1	-
Aerotropolis	SBT-GW-4021	13 Dec 2022	-	626,000	-	<1	-	<0.1	-	<1	-	<1	233,000	<50	-	<1	-	<0.1	-	3	-
Aerotropolis	SBT-GW-4021	18 Jan 2023	-	641,000	-	<1	-	<0.1	-	<1	-	<1	102,000	160	-	<1	-	<0.1	-	3	-
Aerotropolis	SBT-GW-4803	05 May 2023	-	574,000	-	3	-	<0.1	-	<1	-	<1	21,200	<50	-	<1	-	<0.1	-	22	-
Aerotropolis	SBT-GW-4803	24 May 2023	-	526,000	-	2	-	<0.1	-	<1	-	<1	40,000	2,460	-	<1	-	<0.1	-	46	-
Aerotropolis	SMGW-BH-D109	29 Jun 2020	-	210,000	<1	<1	<0.1	<0.1	<1	<1	<1	<1	4,440	4,580	<1	<1	<0.1	<0.1	<1	<1	6
Aerotropolis	SMGW-BH-D109	29 Jul 2020	-	213,000	<1	<1	<0.1	<0.1	<1	<1	<1	<1	4,800	4,450	<1	<1	<0.1	<0.1	<1	<1	<5
Aerotropolis	SMGW-BH-D109	27 Aug 2020	-	167,000	2	1	<0.1	<0.1	<1	<1	1	<1	5,230	3,820	<1	<1	<0.1	<0.1	6	<1	15
Aerotropolis	SMGW-BH-D109	27 Nov 2020	-	222,000	1	<1	<0.1	<0.1	<1	<1	2	<1	-	4,000	<1	<1	<0.1	<0.1	<1	<1	<5
Aerotropolis	SMGW-BH-D109	15 Feb 2021	-	242,000	1	<1	<0.1	<0.1	<1	<1	<1	1	4,890	3,770	<1	<1	<0.1	<0.1	<1	<1	<5
Aerotropolis	SMGW-BH-D109S	11 Aug 2020	-	767,000	5	4	0.2	0.2	2	1	9	2	770	<50	<1	<1	<0.1	<0.1	27	23	34
Aerotropolis	SMGW-BH-D109S	27 Aug 2020	-	667,000	9	4	0.2	<0.1	9	<1	16	<1	4,070	170	6	<1	<0.1	<0.1	33	22	57

Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

Aerotropolis	SMGW-BH-D109S	28 Sep 2020	-	852,000	9	8	<0.1	<0.1	1	<1	4	<1	1,160	680	1	<1	<0.1	<0.1	17	18	26
Aerotropolis	SMGW-BH-D109S	27 Nov 2020	-	825,000	16	12	<0.1	<0.1	1	<1	<1	<1	900	750	<1	<1	<0.1	<0.1	12	11	5
Aerotropolis	SMGW-BH-D109S	01 Feb 2021	-	923,000	16	15	<0.1	<0.1	<1	<1	1	<1	1,110	830	<1	<1	<0.1	<0.1	12	10	9
Aerotropolis	SMGW-BH-D109S	23 Feb 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aerotropolis	SMGW-BH-D109S	07 Dec 2022	-	554,000	-	3	-	<0.1	-	<1	-	<1	2,510	1,490	-	<1	-	<0.1	-	5	-
Aerotropolis	SMGW-BH-D109S	15 Dec 2022	-	606,000	-	2	-	<0.1	-	<1	-	<1	8,820	550	-	<1	-	<0.1	-	4	-
Aerotropolis	SMGW-BH-D207	01 Sep 2020	-	171,000	2	1	<0.1	<0.1	<1	<1	18	<1	960	590	2	<1	<0.1	<0.1	<1	<1	13
Aerotropolis	SMGW-BH-D207	28 Sep 2020	-	204,000	<1	1	<0.1	<0.1	<1	<1	2	<1	880	720	<1	<1	<0.1	<0.1	<1	<1	<5
Aerotropolis	SMGW-BH-D207	17 May 2021	-	192,000	<1	<1	<0.1	<0.1	<1	<1	<1	<1	530	360	<1	<1	<0.1	<0.1	1	1	<5
Aerotropolis	SMGW-BH-D208	17 May 2021	-	159,000	4	<1	0.1	0.1	5	<1	15	8	6,320	880	10	6	<0.1	<0.1	477	495	73
Aerotropolis	SMGW-BH-D308	18 Feb 2021	190,000	-	<1	2	<0.2	<0.2	<1	<1	<1	10	<50	290	<1	<1	<0.1	<0.1	2	14	<5
Aerotropolis	SMGW-BH-D322	15 Mar 2021	330,000	-	<1	-	<0.2	-	<1	-	<1	-	340	-	<1	-	<0.01	-	2	-	<5
Aerotropolis	SMGW-BH-D324	22 Feb 2021	740,000	-	<1	-	<0.2	-	<1	-	<1	-	600	-	<1	-	<0.1	-	6	-	11
Aerotropolis	SMGW-BH-D324	15 Mar 2021	-	-	1	-	<0.2	-	<1	-	<1	-	320	-	<1	-	<0.01	-	3	-	<5
Aerotropolis	SMGW-BH-D326	18 Feb 2021	350,000	-	1	1	<0.2	<0.2	<1	<1	3	3	600	900	<1	<1	<0.1	<0.1	66	24	25
Aerotropolis	SMGW-BH-D326	16 Mar 2021	-	-	1.5	-	<0.2	-	-	<1	-	-	-	-	-	-	<0.01	-	-	-	-
Aerotropolis	SMGW-BH-D329	18 Feb 2021	1,200,000	-	1	<1	<0.2	<0.2	1	<1	2	<1	<50	<50	<1	<1	<0.1	<0.1	3	3	14
Aerotropolis	SMGW-BH-D329	16 Mar 2021	-	-	1	-	<0.2	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-
Aerotropolis	VWP_4406	26 Jul 2022	-	-	<1	-	0.5	-	<1	-	25	-	-	-	<1	-	<0.1	-	<1	-	54
Aerotropolis	VWP_4406	26 Jul 2022	-	-	15	-	0.5	-	49	-	287	-	-	-	65	-	<0.1	-	53	-	387
Aerotropolis	VWP_4406	26 Jul 2022	-	-	<1	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	<1	-	<5
Airport Business Park	SBT-GW-3003_c	30 Nov 2022	-	682,000	-	<1	-	<0.1	-	3	-	<1	3,610	770	-	<1	-	<0.1	-	8	-
Airport Business Park	SBT-GW-3003_c	15 Dec 2022	-	668,000	-	<10	-	<1.0	-	<10	-	<10	3,200	850	-	<10	-	<0.1	-	<10	-
Airport Business Park	SBT-GW-3003_c	19 Jan 2023	-	685,000	-	<10	-	<1.0	-	<10	-	<10	4,980	830	-	<10	-	<0.1	-	<10	-
Airport Business Park	SBT-GW-3003-a	30 Nov 2022	-	862,000	-	2	-	<0.1	-	<1	-	<1	10,200	3,290	-	<1	-	<0.1	-	21	-
Airport Business Park	SBT-GW-3003-a	15 Dec 2022	-	868,000	-	<10	-	<1.0	-	<10	-	<10	10,700	2,410	-	<10	-	<0.1	-	21	-
Airport Business Park	SBT-GW-3003-a	19 Jan 2023	-	850,000	-	<10	-	<1.0	-	<10	-	<10	8,610	3,520	-	<10	-	<0.1	-	12	-
Airport Business Park	SBT-GW-3003-b	30 Nov 2022	-	1,050,000	-	1	-	<0.1	-	<1	-	<1	22,700	130	-	<1	-	<0.1	-	12	-
Airport Business Park	SBT-GW-3003-b	15 Dec 2022	-	1,100,000	-	<10	-	<1.0	-	<10	-	<10	66,600	420	-	<10	-	<0.1	-	11	-
Airport Business Park	SBT-GW-3003-b	19 Jan 2023	-	1,190,000	-	<20	-	<2.0	-	<20	-	<20	16,000	590	-	<20	-	<0.1	-	<20	-
Airport Terminal	SBT-GW-3006W	30 Nov 2022	-	10,000	-	<1	-	<0.1	-	15	-	2	230	140	-	<1	-	<0.1	-	1	-
Airport Terminal	SBT-GW-3006W	15 Dec 2022	-	1,000	-	<1	-	<0.1	-	16	-	<1	4,530	280	-	<1	-	<0.1	-	1	-
Airport Terminal	SBT-GW-3006W	19 Jan 2023	-	2,000	-	<1	-	<0.1	-	12	-	1	4,720	420	-	<1	-	<0.1	-	1	-
Airport Terminal	SBT-GW-3012-a	30 Nov 2022	-	-	-	3	-	<0.1	-	<1	-	<1	-	440	-	<1	-	<0.1	-	17	-
Airport Terminal	SBT-GW-3012-a	15 Dec 2022	-	81,000	-	1	-	<0.1	-	<1	-	1	11,200	370	-	<1	-	<0.1	-	12	-
Airport Terminal	SBT-GW-3012-a	19 Jan 2023	-	82,000	-	1	-	<0.1	-	<1	-	8	197,000	620	-	<1	-	<0.1	-	8	-
Airport Terminal	SBT-GW-3012-b	30 Nov 2022	-	1,110,000	-	<1	-	<0.1	-	<1	-	<1	140,000	<50	-	<1	-	<0.1	-	2	-
Airport Terminal	SBT-GW-3012-b	15 Dec 2022	-	1,100,000	-	<10	-	<1.0	-	<10	-	<10	2,000	<100	-	<10	-	<0.1	-	<10	-
Airport Terminal	SBT-GW-3012-b	19 Jan 2023	-	1,170,000	-	<10	-	<1.0	-	<10	-	<10	11,000	<100	-	<10	-	<0.1	-	<10	-
Airport Terminal	SBT-GW-3012-c	30 Nov 2022	-	408,000	-	2	-	<0.1	-	2	-	<1	5,430	2,070	-	<1	-	<0.1	-	2	-
Airport Terminal	SBT-GW-3012-c	15 Dec 2022	-	526,000	-	<10	-	<1.0	-	<10	-	<10	4,090	1,950	-	<10	-	<0.1	-	<10	-
Airport Terminal	SBT-GW-3012-c	19 Jan 2023	-	573,000	-	<10	-	<1.0	-	<10	-	<10	10,400	2,450	-	<10	-	<0.1	-	<10	-
Airport Terminal	SBT-GW-3022	30 Nov 2022	-	676,000	-	6	-	<0.1	-	<1	-	<1	25,400	1,380	-	<1	-	<0.1	-	5	-
Airport Terminal	SBT-GW-3022	15 Dec 2022	-	697,000	-	<10	-	<1.0	-	<10	-	<10	21,400	1,590	-	<10	-	<0.1	-	<10	-
Airport Terminal	SBT-GW-3022	19 Jan 2023	-	808,000	-	<10	-	<1.0	-	<10	-	<10	17,800	2,390	-	<10	-	<0.1	-	<10	-
Airport Terminal	SBT-GW-4000	24 May 2023	-	368,000	-	1	-	<0.1	-	<1	-	<1	20,600	570	-	<1	-	<0.1	-	37	-
Bringelly	BH-B303	17 Feb 2021	820,000	-	2	<1	0.2	<0.2	1	<1	6	4	680	200	<1	<1	<0.1	<0.1	110	95	39
Bringelly	SBT-BH-4005	25 Jul 2022	-	<1,000	-	1	-	<0.1	-	30	-	6	-	-	-	<1	-	<0.1	-	<1	-
Bringelly	SBT-BH-4006	07 Sep 2022	-	-	<1	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	<1	-	10
Bringelly	SBT-GW-4002	25 Jul 2022	-	597,000	-	3	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	10	-
Bringelly	SBT-GW-4003	25 Jul 2022	-	726,000	-	2	-	0.2	-	<1	-	1	-	-	-	<1	-	<0.1	-	20	-
Bringelly	SBT-GW-4003	22 Nov 2022	-	821,000	-	2	-	<0.1	-	<1	-	<1	1,490	<50	-	<1	-	<0.1	-	7	-
Bringelly	SBT-GW-4003	13 Dec 2022	-	859,000	-	<1	-	<0.1	-	<1	-	<1	950	<50	-	<1	-	<0.1	-	9	-
Bringelly	SBT-GW-4005	21 Nov 2022	-	<1,000	2	1	<0.1	<0.1	15	8	22	7	2,160	<50	6	<1	<0.1	<0.1	4	<1	43
Bringelly	SBT-GW-4005	13 Dec 2022	-	9,000	-	<1	-	<0.1	-	8	-	6	8,160	<50	-	<1	-	<0.1	-	1	-
Bringelly	SBT-GW-4020	25 Jul 2022	-	1,000,000	-	1	-	0.2	-	<1	-	1	-	-	-	<1	-	<0.1	-	18	-
Bringelly	SBT-GW-4022	25 Jul 2022	-	1,190,000	-	1	-	0.2	-	2	-	2	-	-	-	<1	-	<0.1	-	9	-
Bringelly	SBT-GW-4800	05 May 2023	-	669,000	-	16	-	<0.1	-	<1	-	<1	9,000	4,930	-	<1	-	<0.1	-	5	-
Bringelly	SBT-GW-4800	24 May 2023	-	581,000	-	17	-	<0.1	-	<1	-	<1	13,900	7,840	-	<1	-	<0.1	-	103	-
Bringelly	SBT-GW-4801	05 May 2023	-	583,000	-	24	-	<0.1	-	<1	-	<1	950	<50	-	<1	-	<0.1	-	29	-
Bringelly	SBT-GW-4801	24 May 2023	-	768,000	-	21	-	<0.1	-	<1	-	<1	11,000	530	-	<1	-	<0.1	-	20	-
Bringelly	SBT-GW-4802	05 May 2023	-	530,000	-	2	-	<0.1	-	1	-	1	19,800	<50	-	<1	-	<0.1	-	23	-
Bringelly	SBT-GW-4802	24 May 2023	-	513,000	-	1	-	<0.1	-	<1	-	3	9,530	<50	-	<1	-	<0.1	-	63	-
Bringelly	SMGW-BH-D303	17 Feb 2021	820,000	-	2	<1	<0.2	<0.2	<1	<1	6	4	680	200	<1	<1	<0.1	<0.1	110	95	39
Bringelly	SMGW-BH-D303	17 Feb 2021	820,000	-	2	<1	<0.2	<0.2	1	<1	-	-	680	200	<1	<1	<0.1	<0.1	110	95	39
Bringelly	SMGW-BH-D303	15 Mar 2021	1,100,000	-	<1	<1	<0.2	<0.2	<1	<1	1	<1	130	680	<1	<1	<0.01	<0.1	11	10	27
Bringelly	SMGW-BH-D303	05 May 2021	800,000	-	2	<1	<0.2	<0.2	<1	<1	-	-	330	<50	<1	<1	<0.1	<0.1	-	-	43
Bringelly	SMGW-BH-D303S	18 Feb 2021	2,000,000	-	4	3	<0.2	<0.2	1	<1	-	-	850	180	<1	<1	<0.1	<0.1	9	9	24
Bringelly	SMGW-BH-D303S	15 Mar 2021	2,100,000	-	4	<1	<0.2	<0.2	3	<1	-	1	-	230	-	<1	<0.01	<0.1	12	6	13
Bringelly	SMGW-BH-D303S	05 May 2021	1,600,000	-	3	2	<0.2	<0.2	<1	<1	1	<1	750	<50	<1	<1	<0.1	<0.1	4	6	14
Bringelly	SMGW-BH-D305	15 Feb 2021	980,000	-	7	<1	<0.2	<0.2	30	<1	30	3	22,000	230	10	<1	<0.1	<0.1	17	7	71
Bringelly	SMGW-BH-D305	10 May 2021	1,400,000	-	3	<1	<0.2	<0.2	<1	<1	-	<1	350	350	<1	<1	<0.1	<0.1	-	-	35
Southern Tunnels	SBT-BH-4008	28 Oct 2022	-	-	<1	-	<0.1	-	<1	-	<1	-	-	-	<1	-	<0.1	-	<1	-	<5

Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

Southern Tunnels	SBT-BH-4008	01 Feb 2023	-	211,000	-	6	-	<0.1	-	<1	-	<1	2,550	2,190	-	<1	-	<0.1	-	3	-
Southern Tunnels	SBT-BH-4008	02 Mar 2023	-	230,000	-	7	-	<0.1	-	<1	-	<1	2,410	1,980	-	<1	-	<0.1	-	<1	-
Southern Tunnels	SBT-BH-4008	29 Mar 2023	-	225,000	-	5	-	<0.1	-	<1	-	<1	1,950	1,130	-	<1	-	<0.1	-	<1	-
Southern Tunnels	SMGW-BH-D205	27 Nov 2020	-	513,000	3	2	<0.1	<0.1	4	2	4	<1	3,180	2,330	1	<1	<0.1	<0.1	1	<1	13
Southern Tunnels	SMGW-BH-D205	17 Feb 2021	-	575,000	2	2	<0.1	<0.1	2	1	<1	<1	2,630	1,700	<1	<1	<0.1	<0.1	2	<1	14
Southern Tunnels	SMGW-BH-D205	26 May 2021	-	758,000	3	2	0.1	<0.1	3	2	8	2	2,460	1,000	2	<1	<0.1	<0.1	3	1	22
Southern Tunnels	SMGW-BH-D206	17 May 2021	-	580,000	<1	<1	<0.1	<0.1	<1	<1	2	1	<50	<50	<1	<1	<0.1	<0.1	33	33	26
WSI	SMGW-BH-C001S	06 Sep 2019	-	451,000	-	1	-	<0.1	-	<1	-	<1	-	630	-	<1	-	<0.1	-	6	-
WSI	SMGW-BH-C001S	06 Sep 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	SMGW-BH-C001S	27 Aug 2020	-	72,000	2	<1	<0.1	<0.1	3	<1	6	2	3,410	230	3	<1	<0.1	<0.1	3	2	42
WSI	SMGW-BH-C002	06 Sep 2019	-	174,000	-	<1	-	<0.1	-	<1	-	<1	-	<50	-	<1	-	<0.1	-	<1	-
WSI	SMGW-BH-C002	27 Aug 2020	-	4,000	5	4	<0.1	<0.1	2	<1	2	2	2,530	720	7	5	<0.1	<0.1	3	2	156
WSI	SMGW-BH-C201	03 Sep 2020	-	547,000	3	<1	0.2	<0.1	26	<1	86	<1	7,700	2,460	11	<1	<0.1	<0.1	7	<1	113
WSI	SMGW-BH-C201S	27 Aug 2020	-	1,110,000	1	1	0.1	0.1	1	1	1	1	<50	<50	1	1	0.1	0.1	4	4	5
WSI	SMGW-BH-C205S	27 Aug 2020	-	818,000	<1	<1	0.2	0.2	<1	<1	<2	1	60	<50	<1	<1	<0.1	<0.1	11	9	14
WSI	SMGW-BH-C206	08 Sep 2020	-	609,000	<1	<1	<0.1	<0.1	<1	<1	2	1	230	-	<1	<1	<0.1	<0.1	2	2	12
WSI	SMGW-BH-C208	17 May 2021	-	116,000	8	3	3.3	<0.1	4	<1	125	<1	860	110	3	<1	<0.1	<0.1	24	2	13
WSI	SMGW-BH-C209	07 Oct 2020	-	132,000	<1	<1	<0.1	<0.1	6	3	<1	<1	1,700	590	<1	<1	<0.1	<0.1	1	<1	32
WSI	SMGW-BH-C209	02 Dec 2020	-	126,000	1	<1	<0.1	<0.1	3	<1	1	<1	1,670	1,020	<1	<1	<0.1	<0.1	<1	<1	16
WSI	SMGW-BH-C301	15 Apr 2021	400,000	-	21	<1	<0.2	<0.2	-	<1	-	<1	-	<50	54	<1	-	<0.1	50	14	130
WSI	SMGW-BH-C302	15 Apr 2021	1,200,000	-	4	<1	<0.2	<0.2	8	<1	-	-	-	570	7	<1	<0.1	<0.1	8	3	40
WSI	SMGW-BH-C302	12 May 2021	1,100,000	-	<1	<1	<0.2	<0.2	2	<1	-	1	-	<50	-	<1	<0.1	<0.1	9	8	15
WSI	SMGW-BH-C304	20 Apr 2021	510,000	-	3	1	<0.2	<0.2	2	<1	-	1	-	<50	-	<1	<0.1	<0.1	13	12	17
WSI	SMGW-BH-C305	20 Apr 2021	1,100,000	-	3	1	<0.2	<0.2	<1	<1	-	<1	330	<50	<1	<1	<0.1	<0.1	11	8	15
WSI	SMGW-BH-C305	12 May 2021	860,000	-	<1	<1	<0.2	<0.2	<1	<1	1	<1	<50	<50	<1	<1	<0.1	<0.1	9	8	14
WSI	SMGW-BH-C320	29 Apr 2021	840,000	-	1	1	<0.2	<0.2	1	<1	<1	<1	260	<50	<1	<1	<0.01	-	8	6	26
WSI	SMGW-BH-C320	07 Dec 2022	-	723,000	-	<1	-	<0.1	-	<1	-	<1	1,180	490	-	<1	-	<0.1	-	5	-
WSI	SMGW-BH-C321	29 Apr 2021	120,000	-	2	1	<0.2	<0.2	<1	<1	1	<1	-	600	<1	<1	<0.01	-	3	2	-
WSI	SMGW-BH-C321	13 May 2021	130,000	-	-	1	-	<0.2	-	2	-	1	-	-	-	<1	-	<0.1	-	3	-
WSI	SMGW-BH-C321	07 Dec 2022	-	92,000	-	<1	-	<0.1	-	<1	-	<1	12,600	<50	-	<1	-	<0.1	-	<1	-
WSI	SMGW-BH-C322	13 May 2021	1,100,000	-	-	2	-	-	-	4	-	1	-	140	-	<1	-	<0.1	-	42	-
WSI	SMGW-BH-C324	07 Dec 2022	-	701,000	-	<1	-	<0.1	-	<1	-	<1	1,050	280	-	<1	-	<0.1	-	3	-
WSI	SMGW-BH-C324	19 Jan 2023	-	668,000	-	<1	-	<0.1	-	<1	-	<1	1,830	140	-	<1	-	<0.1	-	6	-
WSI	SMGW-BH-C325	29 Apr 2021	200,000	-	4	3	<0.2	<0.2	<1	<1	-	<1	-	-	<1	<1	0.03	-	43	44	41
WSI	SMGW-BH-C330	07 Dec 2022	-	624,000	-	2	-	0.4	-	2	-	30	7,420	330	-	2	-	<0.1	-	239	-
WSI	SMGW-BH-C330	19 Jan 2023	-	708,000	-	<1	-	0.6	-	1	-	24	1,060	<50	-	2	-	<0.1	-	314	-
WSI	SMGW-BH-C331	29 Apr 2021	610,000	-	-	<10	-	-	-	<10	-	-	-	<500	-	<10	-	-	-	<10	-
WSI	SMGW-BH-C332	07 Dec 2022	-	984,000	-	<1	-	<0.1	-	<1	-	<1	460	<50	-	<1	-	<0.1	-	2	-
WSI	SMGW-BH-C332	19 Jan 2023	-	985,000	-	<10	-	<1.0	-	<10	-	<10	1,590	<100	-	<10	-	<0.1	-	<10	-
WSI	SMGW-BH-C340	20 Apr 2021	1,500,000	-	-	<1	-	-	-	2	-	<1	-	850	-	-	-	<0.1	-	150	-
WSI	SMGW-BH-C341	20 Apr 2021	150,000	-	-	<1	-	<0.2	-	2	-	<1	-	880	-	<1	-	-	-	14	-
WSI	SMGW-BH-C342	20 Apr 2021	150,000	-	-	<1	-	<0.2	-	2	-	<1	-	-	-	7	-	<0.1	-	5	-
WSI	SMGW-BH-C343	20 Apr 2021	1,300,000	-	-	<1	-	<0.2	-	<1	-	<1	-	<50	-	<1	-	<0.1	-	27	-
WSI	SMGW-BH-C344	20 Apr 2021	910,000	-	-	2	-	<0.2	-	1	-	<1	-	<50	-	<1	-	<0.1	-	9	-
WSI	SMGW-BH-C350	21 Apr 2021	670,000	-	-	<1	-	<0.2	-	<1	-	1	-	<50	-	<1	-	<0.1	-	8	-
WSI	SMGW-BH-C351	21 Apr 2021	1,100,000	-	-	1	-	<0.2	-	1	-	<1	-	120	-	<1	-	<0.1	-	<1	-
WSI	SMGW-BH-C352	21 Apr 2021	1,300,000	-	-	2	-	<0.2	-	1	-	-	-	70	-	<1	-	<0.1	-	-	-
WSI	WSA GW04	28 Mar 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW04	29 Mar 2017	-	-	-	4	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	2	-
WSI	WSA GW04	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW04	06 Oct 2017	-	-	-	5	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	67	-
WSI	WSA GW04	18 Dec 2017	-	-	-	5	-	<0.2	-	<1	-	33	-	-	-	<1	-	<0.1	-	120	-
WSI	WSA GW04	19 Dec 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW04	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW04	18 Apr 2018	-	-	-	4	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	110	-
WSI	WSA GW04	03 Jul 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW04	04 Jul 2018	-	-	-	3	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	93	-
WSI	WSA GW04	06 Sep 2018	-	-	-	3	-	<0.2	-	<1	-	5	-	-	-	<1	-	<0.1	-	10	-
WSI	WSA GW04	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW04	12 Dec 2018	-	-	-	4	-	<0.2	-	<1	-	8	-	-	-	1	-	<0.1	-	7	-
WSI	WSA GW04	14 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW04	04 Apr 2019	-	-	-	4	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	16	-
WSI	WSA GW04	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW05	28 Mar 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW05	29 Mar 2017	-	-	-	6	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	3	-
WSI	WSA GW05	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW05	06 Oct 2017	-	-	-	3	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	49	-
WSI	WSA GW05	18 Dec 2017	-	-	-	2	-	<0.2	-	<1	-	32	-	-	-	1	-	<0.1	-	55	-
WSI	WSA GW05	19 Dec 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW05	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW05	18 Apr 2018	-	-	-	2	-	<0.2	-	<1	-	14	-	-	-	2	-	<0.1	-	15	-
WSI	WSA GW05	03 Jul 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW05	04 Jul 2018	-	-	-	2	-	<0.2	-	<1	-	37	-	-	-	3	-	<0.1	-	14	-

WSI	WSA GW05	06 Sep 2018	-	-	-	2	-	<0.2	-	<1	-	24	-	-	-	2	-	<0.1	-	15	-
WSI	WSA GW05	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW05	13 Dec 2018	-	-	-	<1	-	<0.2	-	<1	-	19	-	-	-	2	-	<0.1	-	13	-
WSI	WSA GW05	14 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW05	04 Apr 2019	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	9	-
WSI	WSA GW05	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW06	28 Mar 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW06	05 Apr 2017	-	-	-	3	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	3	-
WSI	WSA GW06	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW06	06 Oct 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	260	-
WSI	WSA GW06	18 Dec 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	12	-
WSI	WSA GW06	19 Dec 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW06	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW06	18 Apr 2018	-	-	-	1	-	<0.2	-	<1	-	34	-	-	-	3	-	<0.1	-	25	-
WSI	WSA GW06	03 Jul 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW06	04 Jul 2018	-	-	-	<1	-	<0.2	-	<1	-	2	-	-	-	<1	-	<0.1	-	10	-
WSI	WSA GW06	06 Sep 2018	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	3	-
WSI	WSA GW06	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW06	12 Dec 2018	-	-	-	<1	-	<0.2	-	<1	-	3	-	-	-	<1	-	<0.1	-	10	-
WSI	WSA GW06	14 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW06	04 Apr 2019	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	4	-
WSI	WSA GW06	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW07	29 Mar 2017	-	-	-	<1	-	<0.2	-	2	-	<1	-	-	-	<1	-	<0.1	-	2	-
WSI	WSA GW07	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW07	06 Oct 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	57	-
WSI	WSA GW07	18 Dec 2017	-	-	-	<1	-	<0.2	-	<1	-	2	-	-	-	<1	-	<0.1	-	2	-
WSI	WSA GW07	19 Dec 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW07	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW07	18 Apr 2018	-	-	-	<1	-	<0.2	-	<1	-	17	-	-	-	3	-	<0.1	-	<1	-
WSI	WSA GW07	03 Jul 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW07	04 Jul 2018	-	-	-	<1	-	<0.2	-	<1	-	24	-	-	-	2	-	<0.1	-	12	-
WSI	WSA GW07	06 Sep 2018	-	-	-	<1	-	<0.2	-	<1	-	27	-	-	-	2	-	<0.1	-	6	-
WSI	WSA GW07	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW07	13 Dec 2018	-	-	-	<1	-	<0.2	-	<1	-	16	-	-	-	<1	-	<0.1	-	5	-
WSI	WSA GW07	14 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW07	04 Apr 2019	-	-	-	<1	-	0.2	-	<1	-	31	-	-	-	2	-	<0.1	-	10	-
WSI	WSA GW07	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW08	28 Mar 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW08	29 Mar 2017	-	-	-	<1	-	<0.2	-	2	-	<1	-	-	-	<1	-	0.8	-	3	-
WSI	WSA GW08	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW08	05 Oct 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	9	-
WSI	WSA GW08	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW08	18 Dec 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	<1	-
WSI	WSA GW08	19 Dec 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW08	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW08	18 Apr 2018	-	-	-	<1	-	<0.2	-	<1	-	1	-	-	-	<1	-	<0.1	-	5	-
WSI	WSA GW08	03 Jul 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW08	04 Jul 2018	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	4	-
WSI	WSA GW08	06 Sep 2018	-	-	-	<1	-	<0.2	-	<1	-	4	-	-	-	<1	-	<0.1	-	5	-
WSI	WSA GW08	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW08	13 Dec 2018	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	0.3	-	5	-
WSI	WSA GW08	14 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW08	04 Apr 2019	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	0.2	-	<1	-
WSI	WSA GW08	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW14	28 Mar 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW14	29 Mar 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	3	-
WSI	WSA GW14	14 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW14	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW14	05 Oct 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	3	-
WSI	WSA GW14	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW14	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW14	19 Apr 2018	-	-	-	<1	-	<0.2	-	<1	-	71	-	-	-	2	-	<0.1	-	170	-
WSI	WSA GW14	03 Jul 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW14	05 Jul 2018	-	-	-	<1	-	<0.2	-	<1	-	13	-	-	-	<1	-	<0.1	-	13	-
WSI	WSA GW14	06 Sep 2018	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	4	-
WSI	WSA GW14	12 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW14	03 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW16	28 Mar 2017	-	-	-	16	-	<0.2	-	2	-	<1	-	-	-	<1	-	<0.1	-	5	-
WSI	WSA GW16	14 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW16	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW16	05 Oct 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	9	-
WSI	WSA GW16	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW16	17 Apr 2018	-	-	-	3	-	<0.2	-	<1	-	8	-	-	-	1	-	<0.1	-	5	-

WSI	WSA GW16	03 Jul 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW16	05 Jul 2018	-	-	-	2	-	<0.2	-	<1	-	2	-	-	-	<1	-	<0.1	-	30	-
WSI	WSA GW16	07 Sep 2018	-	-	-	2	-	<0.2	-	<1	-	2	-	-	-	<1	-	<0.1	-	25	-
WSI	WSA GW16	12 Dec 2018	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	6	-
WSI	WSA GW16	03 Apr 2019	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	18	-
WSI	WSA GW16	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW17	28 Mar 2017	-	-	-	3	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	10	-
WSI	WSA GW17	14 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW17	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW17	04 Oct 2017	-	-	-	4	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	14	-
WSI	WSA GW17	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW17	19 Dec 2017	-	-	-	1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	4	-
WSI	WSA GW17	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW17	19 Apr 2018	-	-	-	3	-	<0.2	-	<1	-	10	-	-	-	<1	-	<0.1	-	120	-
WSI	WSA GW17	03 Jul 2018	-	-	-	3	-	<0.2	-	<1	-	3	-	-	-	<1	-	<0.1	-	81	-
WSI	WSA GW17	05 Sep 2018	-	-	-	1	-	<0.2	-	<1	-	24	-	-	-	2	-	<0.1	-	20	-
WSI	WSA GW17	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW17	13 Dec 2018	-	-	-	3	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	6	-
WSI	WSA GW17	14 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW17	03 Apr 2019	-	-	-	2	-	<0.2	-	<1	-	9	-	-	-	<1	-	<0.1	-	9	-
WSI	WSA GW17	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW18	28 Mar 2017	-	-	-	6	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	3	-
WSI	WSA GW18	14 Jun 2017	-	-	-	12	-	<0.2	-	2	-	<1	-	-	-	<1	-	<0.1	-	18	-
WSI	WSA GW18	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW18	04 Oct 2017	-	-	-	23	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	14	-
WSI	WSA GW18	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW18	19 Dec 2017	-	-	-	11	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	3	-
WSI	WSA GW18	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW18	19 Apr 2018	-	-	-	18	-	<0.2	-	<1	-	10	-	-	-	<1	-	<0.1	-	8	-
WSI	WSA GW18	03 Jul 2018	-	-	-	15	-	<0.2	-	<1	-	5	-	-	-	<1	-	<0.1	-	7	-
WSI	WSA GW18	05 Sep 2018	-	-	-	4	-	<0.2	-	<1	-	<20	-	-	-	<1	-	<0.1	-	10	-
WSI	WSA GW18	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW18	13 Dec 2018	-	-	-	9	-	<0.2	-	<1	-	12	-	-	-	<1	-	<0.1	-	5	-
WSI	WSA GW18	14 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW18	03 Apr 2019	-	-	-	11	-	<0.2	-	<1	-	2	-	-	-	<1	-	<0.1	-	8	-
WSI	WSA GW18	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW19	28 Mar 2017	-	-	-	1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	150	-
WSI	WSA GW19	14 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW19	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW19	04 Oct 2017	-	-	-	<1	-	0.5	-	<1	-	9	-	-	-	<1	-	<0.1	-	200	-
WSI	WSA GW19	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW19	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW19	19 Apr 2018	-	-	-	1	-	0.2	-	<1	-	17	-	-	-	2	-	<0.1	-	190	-
WSI	WSA GW19	03 Jul 2018	-	-	-	<1	-	<0.2	-	<1	-	23	-	-	-	2	-	<0.1	-	120	-
WSI	WSA GW19	07 Sep 2018	-	-	-	<1	-	<0.2	-	<1	-	87	-	-	-	8	-	<0.1	-	110	-
WSI	WSA GW19	14 Dec 2018	-	-	-	<1	-	0.3	-	<1	-	13	-	-	-	1	-	<0.1	-	190	-
WSI	WSA GW20	28 Mar 2017	-	-	-	<1	-	<0.2	-	8	-	<1	-	-	-	<1	-	<0.1	-	2	-
WSI	WSA GW20	14 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW20	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW20	04 Oct 2017	-	-	-	<1	-	<0.2	-	<1	-	2	-	-	-	<1	-	0.1	-	6	-
WSI	WSA GW20	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW20	19 Dec 2017	-	-	-	<1	-	<0.2	-	<1	-	3	-	-	-	<1	-	<0.1	-	3	-
WSI	WSA GW20	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW20	18 Apr 2018	-	-	-	<1	-	<0.2	-	<1	-	43	-	-	-	3	-	<0.1	-	61	-
WSI	WSA GW20	03 Jul 2018	-	-	-	<1	-	<0.2	-	<1	-	15	-	-	-	1	-	<0.1	-	14	-
WSI	WSA GW20	05 Sep 2018	-	-	-	2	-	<0.2	-	<1	-	20	-	-	-	1	-	<0.1	-	25	-
WSI	WSA GW20	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW20	14 Dec 2018	-	-	-	4	-	<0.2	-	<1	-	22	-	-	-	2	-	<0.1	-	19	-
WSI	WSA GW20	03 Apr 2019	-	-	-	5	-	<0.2	-	<1	-	10	-	-	-	<1	-	<0.1	-	15	-
WSI	WSA GW20	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW21	28 Mar 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	<1	-
WSI	WSA GW21	14 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW21	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW21	04 Oct 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	4	-
WSI	WSA GW21	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW21	19 Dec 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	<1	-
WSI	WSA GW21	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW21	18 Apr 2018	-	-	-	<1	-	<0.2	-	2	-	22	-	-	-	2	-	<0.1	-	7	-
WSI	WSA GW21	03 Jul 2018	-	-	-	<1	-	<0.2	-	<1	-	23	-	-	-	<2	-	<0.1	-	<5	-
WSI	WSA GW21	05 Sep 2018	-	-	-	<1	-	<0.2	-	<1	-	21	-	-	-	2	-	<0.1	-	6	-
WSI	WSA GW21	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW21	14 Dec 2018	-	-	-	1	-	<0.2	-	<1	-	18	-	-	-	2	-	<0.1	-	9	-
WSI	WSA GW21	03 Apr 2019	-	-	-	1	-	<0.2	-	<1	-	26	-	-	-	2	-	<0.1	-	8	-

Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

WSI	WSA GW21	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW22	28 Mar 2017	-	-	-	11	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	2	-
WSI	WSA GW22	14 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW22	15 Jun 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW22	05 Oct 2017	-	-	-	2	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	20	-
WSI	WSA GW22	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW22	19 Dec 2017	-	-	-	4	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	<1	-
WSI	WSA GW22	17 Apr 2018	-	-	-	<1	-	<0.2	-	<1	-	3	-	-	-	<1	-	<0.1	-	6	-
WSI	WSA GW22	03 Jul 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW22	05 Jul 2018	-	-	-	<1	-	<0.2	-	<1	-	2	-	-	-	<1	-	<0.1	-	4	-
WSI	WSA GW22	07 Sep 2018	-	-	-	2	-	<0.2	-	<1	-	6	-	-	-	<1	-	<0.1	-	6	-
WSI	WSA GW22	12 Dec 2018	-	-	-	3	-	<0.2	-	<1	-	4	-	-	-	<1	-	<0.1	-	7	-
WSI	WSA GW22	14 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW22	05 Apr 2019	-	-	-	1	-	<0.2	-	<1	-	2	-	-	-	<1	-	<0.1	-	9	-
WSI	WSA GW23	28 Mar 2017	-	-	-	<1	-	<0.2	-	2	-	<1	-	-	-	<1	-	<0.1	-	<1	-
WSI	WSA GW23	04 Oct 2017	-	-	-	<1	-	<0.2	-	<1	-	4	-	-	-	<1	-	<0.1	-	7	-
WSI	WSA GW23	06 Oct 2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW23	19 Dec 2017	-	-	-	<1	-	<0.2	-	<1	-	<1	-	-	-	<1	-	<0.1	-	1	-
WSI	WSA GW23	17 Apr 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW23	19 Apr 2018	-	-	-	<1	-	<0.2	-	<1	-	73	-	-	-	<3	-	<0.2	-	11	-
WSI	WSA GW23	03 Jul 2018	-	-	-	<1	-	<0.2	-	<1	-	22	-	-	-	2	-	<0.1	-	6	-
WSI	WSA GW23	05 Sep 2018	-	-	-	<1	-	<0.2	-	<1	-	39	-	-	-	2	-	<0.1	-	7	-
WSI	WSA GW23	07 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW23	13 Dec 2018	-	-	-	<1	-	<0.2	-	1	-	16	-	-	-	<1	-	<0.1	-	5	-
WSI	WSA GW23	14 Dec 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WSI	WSA GW23	03 Apr 2019	-	-	-	<1	-	<0.2	-	<1	-	10	-	-	-	<1	-	<0.1	-	4	-
WSI	WSA GW23	05 Apr 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Environmental Standards
ANZG, March 2021, ANZG (2018) Freshwater 95% LOSP Toxicant DGVs
ANZG, March 2021, ANZG (2018) Freshwater 95% LOSP Toxicant DGVs
Office of Parliamentary Counsel, 12 October 2017, Airport Regulations - Water pollution - accepted limits - fresh water
HEPA, January 2020, PFAS NEMP 2020 Freshwater 99%

Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

Metals																								
Zinc (filtered)	Molybdenum	Molybdenum (filtered)	Selenium	Selenium (filtered)	Chromium (hexavalent) (filtered)	Tin (filtered)	Aluminium	Aluminium (filtered)	Arsenic III	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Boron	Boron (filtered)	Chromium (Trivalent) (filtered)	Cobalt	Cobalt (filtered)	Manganese	Manganese (filtered)	Strontium	Strontium (filtered)	Vanadium	Vanadium (filtered)
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
5			10	10	10		10	10								10	1	1	1	1				
8			11	11	1		55	55	24					370	370				1,900	1,900				
5			5	5			100	100				4	4											
15					1		80	80																
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	89	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<5	-	-	-	-	<10	-	4,090	40	-	-	-	-	-	-	-	<10	6	2	1,550	1,160	-	-	-	-
18	-	-	-	-	-	-	8,940	<10	-	-	-	-	-	-	-	-	12	6	1,970	1,840	-	-	-	-
12	-	-	-	-	<1,000	-	16,500	<10	-	-	-	-	-	-	-	<1,000	19	4	2,250	1,950	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	<10	-	220	<10	-	-	-	-	-	-	-	<10	7	7	1,210	1,380	-	-	-	-
26	-	-	-	-	-	-	550	<10	-	-	-	-	-	-	-	-	4	2	576	328	-	-	-	-
10	-	-	-	-	<10	-	1,400	<10	-	-	-	-	-	-	-	<10	4	<1	471	182	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<5	-	-	-	-	-	-	9,830	<10	-	-	-	-	-	-	-	-	8	<1	486	<1	-	-	-	-
11	-	-	-	-	-	-	1,090	30	-	-	-	-	-	-	-	-	<1	<1	66	20	-	-	-	-
8	-	-	-	-	-	-	1,020	350	-	-	-	-	-	-	-	-	<1	<1	117	17	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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7	-	-	-	-	<10	-	340	<10	-	-	-	-	-	-	-	<10	6	2	144	62	-	-	-	-
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140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	1,200	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	420	-	-	-	-
77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	660	-	-	-	-
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280	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

BTEX								TPH																
Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (VOC)	Total BTEX	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	F1 (C6 - C10)	F1 (C6 - C10) less BTEX	F2 (C10 - C16)	F2 C10 - C16 (minus Naphthalene)	F3 (C16 - C34)	F4 (C34 - C40)	>C10 - C16 Fraction minus Naphthalene (F2) (SG)	>C10 - C40 Fraction (sum) (SG)	TRH >C10-C16 (after silica gel clean-up)	TRH >C16-C34 (after silica gel clean-up)	TRH >C34-C40 (after silica gel clean-up)
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
1	2	2	2	2	2	5	1	20	50	100	50	50	100	20	20	100	100	100	100		100	100	100	100
950	180	80	350																					
300	300	140						150				600												
<1	44	<1	<1	<2	<3	-	-	80	<50	<100	<100	<100	<100	90	<100	<50	<50	<100	-	-	-	<50	<100	<100
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

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<1	<1	<1	<1	<2	<3	-	-	<20	<50	<100	<100	<100	-	<20	<20	<50	<50	<100	<100	-	-	-	-	-
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				PAH																				
TRH C10-C36 (Total) (after silica gel clean-up)	TPH C10-C14 Fraction after Silica Cleanup	TPH C15-C28 Fraction after Silica Cleanup	TPH C29-C36 Fraction after Silica Cleanup	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (Sum of total)	Naphthalene	Benzo(a) pyrene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene TEQ (lower bound) *	Fluorene	PAHs (Vic EPA List)	Benzo(b+j+k)fluoranthene	Naphthalene-PAH
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
50	50	100	50	1	1	1	1	1	1	1	1	1	1	1	0.5	1	0.5	1	1		1	0.5	4	
						0.4					1.4		2			16	0.2							
															3									

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<50	<50	<100	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-
-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<0.5	<1.0	<1.0	-	<1.0	-	<4	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.19	<10	<0.01	<0.01	<0.01	-	<0.01	-	-	0.18
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-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	-	<1	-	-	<1
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-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.3	<10	<0.01	<0.01	<0.01	-	<0.01	-	-	0.3
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-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<0.01	<0.01	<0.01	-	<0.01	-	-	<0.01
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-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<0.01	<0.01	<0.01	-	<0.01	-	-	<0.01
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-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.13	0.03	0.39	<10	<0.01	<0.01	<0.01	-	0.03	-	-	0.2

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					Phenols																			
Benzo(a)pyrene TEQ calc (Zero)	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2,4-Dimethylphenol	2,4,5-Trichlorophenol	2-Nitrophenol	3/4-Methylphenol (m/p-cresol)	4-chloro-3-methylphenol	Pentachlorophenol	Phenol	2-Chlorophenol	2-Methylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Dinoseb	Phenols (Total Non Halogenated)	Tetrachlorophenols	3-&4-methylphenol
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
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-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
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-	-	-	-	-	<10	-	<3	<1	-	<5	<6	<10	-	<3	<3	<3	<1	<5	<100	<1	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.1	<0.1	<0.1	<1	<1	<100	<0.1	<100	<100	<0.2	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.05	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.1	<0.1	<0.1	<1	<1	<100	<0.1	<100	<100	<0.2	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	<3	<3	<3	<10	<10	<6	<10	<10	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<1	-	<5	<6	<10	-	<3	<3	<3	<1	<5	<100	<1	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-
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-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	<3	<3	<3	<10	<10	<6	<10	<10	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.05	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	<10	<3	<3	<3	<10	<10	<6	<10	<10	<3	<3	<3	<0.1	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	<3	<3	<3	<10	<10	<6	<10	<10	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.1	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<1	-	<5	<6	<10	-	<3	<3	<3	<1	<5	<100	<1	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	<1	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.05	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.1	<0.1	<0.1	<1	<1	<100	<0.1	<100	<100	<0.2	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	<3	<3	<3	<10	<10	<6	<10	<10	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.1	<0.1	<0.1	<1	<1	<100	<0.1	<100	<100	<0.2	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
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-	-	-	-	-	<10	-	<3	<1	-	<5	<6	<10	-	<3	<3	<3	<1	<5	<100	<1	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-
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-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.1	<0.1	<0.1	<1	<1	<100	<0.1	<100	<100	<0.2	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.1	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	<1	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.1	<0.1	<0.1	<1	<1	<100	<0.1	<100	<100	<0.2	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<1	-	<5	<6	<10	-	<3	<3	<3	<0.01	<5	<100	<1	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.1	<0.1	<0.1	<1	<1	<100	<0.1	<100	<100	<0.2	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

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-	-	-	-	-	<10	-	<3	<1	-	<5	<6	<10	-	<3	<3	<3	<1	<5	<100	<1	<100	<100	<30	-
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-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	<3	<3	<3	<10	<10	<6	<10	<10	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.1	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	<10	<3	<3	<3	<10	<10	<6	<10	<10	<3	<3	<3	<30	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.05	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	-	<3	<3	-	<10	<6	<10	-	<3	<3	<3	<0.01	<30	<100	<30	<100	<100	<30	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<1	-	<0.5	<0.5	-	<1	<1	<1	-	<0.5	<0.5	<0.5	<5	<5	<100	<5	<100	<100	<1	-
-	-	-	-	-	<0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.1	<0.1	<0.1	<1	<1	<100	<0.1	<100	<100	<0.2	-
-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<1	<0.05	<0.05	<0.05	<0.5	<0.5	<10	<0.5	<10	<10	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<10	<3	<3	<3	<10	<10	<6	<10	<10	<3	<3	<3	<0.1	<30	<100	<30	<100	<100	<30	-
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

																	OCP							
Phenols (Total Halogenated)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Hexachlorobenzene	Methoxychlor	chlordane	Endrin ketone	DDT+DDE+DDD	Heptachlor epoxide	Toxaphene	Organochlorine
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5		
								0.01					0.02		0.2	0.09	0.1		0.08				0.2	
			0.01					0.001	0.002				0.003		0.003	0.01	0.007	0.04	0.004				0.008	
-	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.1	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<1	-
-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	-	-
-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<1	-
-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	-
-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<1	-
-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	-
-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<1	-
-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<2	<2	<2	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	-	<2	<2	<4	-	-	-	<4	<2	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	-	-
-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	-	-
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-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<2	<0.2	<0.2	<0.2	<1	-
-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	-	-
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-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<2	<0.2	<0.2	<0.2	<1	-
-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<2	<0.2	<0.2	<0.2	<1	-
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-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<2	<0.2	<0.2	<0.2	<1	-
-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<2	<0.2	<0.2	<0.2	<1	-
-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<2	<0.2	<0.2	<0.2	<1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	<0.01	-	-	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	<0.01	-	<0.01	-	-
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-	-	<0.05	-	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	-	-	<0.05	<0.1	<0.05	-	<1
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<10	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	-	<0.1
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-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
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<10	-	<0.01	-	-	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	<0.01	-	<0.01	-	-
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<10	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	-	<0.1
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<10	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	-	<0.1
<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<10	<1
<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	<0.01	-	-	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	<0.01	-	<0.01	-	-
<10	-	<0.05	-	<0.1	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	-	-	<0.05	<0.1	<0.05	-	<1
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<10	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	-	<0.1
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<10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<10	<1
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

																									Organophosphorous P
pesticides EPAVic	Other organochlorine pesticides EPAVic		Total OCP	Chlordane (cis)	Chlordane (trans)	p,p-DDT	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Coumaphos	Chlorpyrifos-methyl	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Disulfoton	Dimethoate	Ethoprop	Fensulfothion	Ethion
mg/kg	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				0.5	0.5			0.5		0.5	0.5	0.5	0.5		0.5			0.5	0.5		0.5			0.5
								0.02					0.01					0.01			0.15			
								0.01					0.001											
-	-	-	-	-	-	<0.01	<1	<1	<1	-	-	<1	<10	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1
-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5
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-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
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-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5
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-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5
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-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5
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-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5
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<0.002	-	<0.002	-	-	-	<0.2	<2	<2	<2	-	-	<2	<20	<20	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
<0.00001	-	<0.00001	-	-	-	<0.01	<1	<1	<1	-	-	<1	<10	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1
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<0.00001	-	<0.00001	-	-	-	<0.01	<1	<1	<1	-	-	<1	<10	<10	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1
-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5
-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	<0.5	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5
-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	-	<2	-	-	<2	<2	-	<2	-	-	<2
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-	-	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

esticides																	Amino Aliphatics				Amino Aromatics			
Fenitrothion	Fenthion	EPN	Merphos	Malathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Prothiofos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	1-naphthylamine	N-Nitrosodiphenyl & Diphenylamine	Alkalinity (total as CaCO3)	Alkalinity (Hydroxide) as CaCO3
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	0.5			0.5	2		2					0.5					2	2	2	2	2	4	1,000	1,000
0.2				0.05																				
				0.07																				
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-	-	-	-	-	-	1,200,000	<20
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	500,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	750,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	804,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	872,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	936,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	1,150,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	858,000	<1,000
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-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	1,050,000	<1,000
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-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	1,190,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	953,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	931,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	-	-
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	40,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	65,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	-	-
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-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	1,060,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,020,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	928,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	1,080,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,070,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	745,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	771,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	779,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	1,000,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	955,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	978,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	991,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	830,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	789,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	780,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	941,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	994,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,260,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,290,000	<1,000

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,300,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,350,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,350,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	-	-
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	671,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	881,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	924,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,030,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	951,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	643,000	<1,000
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	-	-	-	-	-	-	740,000	<20,000
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<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	-	-	-	-	-	-	1,200,000	<20,000
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-	-	-	-	-	-	-	-
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	-	-	-	-	-	-	1,000,000	<20,000
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-	-	-	-	-	-	-	-
<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	-	-	-	-	-	-	1,000,000	<20,000
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-	-	-	-	-	-	-	-
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	-	-
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	-	-
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	-	-
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	801,000	<1,000
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	793,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	393,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	373,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	944,000	<1,000
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	943,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	926,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	239,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	251,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	310,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	-	-
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	274,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	326,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	1,220,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,220,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,210,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	542,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	700,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	671,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	838,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,040,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,090,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	1,240,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	760,000	<20
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	135,000	88,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	944,000	<1,000
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	882,000	<1,000
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-	<2	-	-	<2	-	-	-	-	-	-	-	<2	-	-	-	-	<2	<2	<2	<2	<2	<4	938,000	<1,000
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-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	977,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	1,020,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	853,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	996,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	628,000	<1,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	660,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	760,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	760,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	920,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,100,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	990,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,200,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	710,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,200,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	251,000	<1,000
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	850,000	<1,000
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,100,000	<20,000
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,100,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	870,000	<20,000
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	960,000	<20,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,100,000	<20,000
-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	824,000	<1,000
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730,000	<20,000
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79,000	<1,000
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-	<0.5	-	-	<0.5	<2.0	-	<2.0	-	-	-	-	<0.5	-	-	-	-	<2	<2	<2	<2	<2	<4	1,040,000	<1,000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,040,000	<1,000
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
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-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
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<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	-	-	-	-	-	-	-
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-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-
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-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
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-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-
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-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
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-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
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-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-
-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
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-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

Alkalinity			Anilines						Biological		Carbamates	Dioxins		Field										NA
Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	Sulphate Reducing Bacteria Population Estimate	Sulphate Reducing Bacteria Population Estimate	Methiocarb	234678-HxCDF I-TEF	1,2,3,4,6,7,8-Heptachlorodibenzofuran	Electrical Conductivity (Non Compensated)	Depth to Water	DO (Field)	Redox Potential (Field)	Temp (Field)	ORP	TDS (Field)	Depth to groundwater (measured)	pH (Field)	PURGE VOLUME	Sulfate as SO4 - Turbidimetric (filtered)
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pac/mL	CFU/mL	µg/L	µg/L	µg/L	µS/cm	mbTOC	µg/L	mV	oC	CFU/mV	µg/L	m	-	L	mg/L
1,000	1,000		4	4	2	2	2	2																1
								250																
																						5.5		
																						6.5-9		
																						6.5-8		
1,200,000	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
500,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
750,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	16,911	-	3,750	79.2	17.1	-	-	3.766	7.24	-	-
804,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	18,272	-	2,210	-17.3	20.3	-	-	3.683	6.57	-	-
872,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	20,578	-	300	-26.2	24.6	-	-	3.825	7.21	-	-
936,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,150,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
858,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,110,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,050,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
808,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,220,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
839,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,050,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,190,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	26,421	-	2,620	101.3	17.7	-	-	3.573	7.17	-	-
953,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	22,658	-	2,160	-30.1	20.9	-	-	3.501	6.63	-	-
931,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	22,931	-	0	-29.3	22.4	-	-	3.305	7.32	-	-
-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	19,576	-	860	-157.5	22.1	-	-	4.971	7.02	-	-
41,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	703	-	2,270	-24.5	23.3	-	-	5.003	6.66	-	31
65,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	665	-	5,110	-50.1	22.8	-	-	4.847	7	-	24
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1,120,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,060,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	14,067	-	3,780	157.6	18	-	-	6.459	7.14	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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745,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
771,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	9,934	-	1,110	116.8	18.8	-	-	8.746	7.49	-	-
779,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	13,998	-	870	-18.7	21.8	-	-	8.753	6.45	-	-
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955,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	20,146	-	1,330	52.9	24.2	-	-	2.971	6.5	-	-
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978,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	18,811	-	1,170	-295.3	20.6	-	-	10.209	6.77	-	583
991,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	18,851	-	1,580	20.7	17.3	-	-	10.547	6.81	-	593
830,000	<1,000	1,280,000	-	-	-	-	-	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
789,000	<1,000	1,310,000	-	-	-	-	-	-	115,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
780,000	<1,000	1,170,000	-	-	-	-	-	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
941,000	<1,000	1,450,000	-	-	-	-	-	-	115,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
994,000	<1,000	1,540,000	-	-	-	-	-	-	27,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,260,000	<1,000	3,760,000	-	-	-	-	-	-	115,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,290,000	<1,000	3,380,000	-	-	-	-	-	-	115,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1,300,000	<1,000	4,140,000	-	-	-	-	-	-	115,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,350,000	<1,000	4,110,000	-	-	-	-	-	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,350,000	<1,000	4,490,000	-	-	-	-	-	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
671,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	15,489	-	730	-154.3	17.7	-	-	5.239	6.56	-	-
881,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	17,037	-	3,140	-77.2	19.2	-	-	5.369	6.76	-	-
924,000	<1,000	1,040,000	<4	<4	<2	<2	<2	<2	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,030,000	<1,000	1,160,000	-	-	-	-	-	-	115,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
951,000	<1,000	1,190,000	-	-	-	-	-	-	115,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
643,000	<1,000	982,000	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
740,000	<10,000	1,000,000	-	-	-	-	-	-	-	>110	-	-	-	-	-	-	-	-	-	5,500,000	-	-	-	-
1,200,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,200,000	<10,000	-	-	-	-	-	-	-	-	4.3	-	-	-	-	-	-	-	-	-	12,000,000	-	-	-	-
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1,000,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,600,000	-	-	-	-
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1,000,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,000,000	-	-	-	-
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-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
801,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	28,624	-	660	38.5	18.8	-	-	7.719	6.99	-	-
794,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	25,944	-	1,190	-120.7	18.6	-	-	7.868	6.45	-	-
793,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	24,319	-	330	-105.5	18.2	-	-	7.715	7.82	-	-
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373,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	25,892	-	1,150	24.6	18.8	-	-	3.953	6.55	-	-
324,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	24,458	-	680	-61.7	18.7	-	-	3.78	7.3	-	-
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943,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	32,528	-	880	16.4	19	-	-	6.793	6.35	-	-
926,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	31,467	-	760	-66.7	18.4	-	-	4.415	7.44	-	-
239,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	1,817	-	2,290	75.3	20.4	-	-	9.694	6.93	-	-
251,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	2,479	-	1,180	14.4	19.2	-	-	10.312	6.28	-	-
310,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	3,014	-	1,480	-74.7	19.6	-	-	11.35	7.38	-	-
-	-	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	7.683	-	-	-
274,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	4,624	-	980	108.6	18	-	-	6.256	6.23	-	-
326,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	5,036	-	2,930	-59.6	18.8	-	-	6.96	7.12	-	-
1,220,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	15,747	-	3,340	70.1	19	-	-	10.003	7.15	-	-
1,220,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	26,933	-	2,140	63.4	18.6	-	-	11.302	6.2	-	-
1,210,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	25,332	-	1,470	-62.5	18.9	-	-	10.155	7.34	-	-
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700,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	26,396	-	800	-73.2	18.6	-	-	14.732	6.12	-	-
671,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	19,128	-	1,040	-61.6	19.4	-	-	12.53	7.45	-	-
838,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	24,586	-	1,130	-34.5	20.2	-	-	4.193	7.28	-	-
1,040,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	24,291	-	1,380	-47.9	20.3	-	-	6.088	6.17	-	-
1,090,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	23,763	-	750	-43.6	18.9	-	-	7.971	7.58	-	-
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760,000	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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944,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
923,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,120,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	23,741	-	4,480	175.4	16.9	-	-	4.835	6.62	-	-
882,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	22,432	-	1,060	78.2	22	-	-	4.786	6.71	-	-
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660,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	21,065	-	860	14.6	18.9	-	-	14.606	6.79	-	510
760,000	<10,000	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	14,000,000	-	-	-	-
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1,000,000	<10,000	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-	-	-	17,000,000	-	-	-	-
1,200,000	<10,000	7,300,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,400,000	-	-	-	-
710,000	<10,000	4,700,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,000,000	-	-	-	-
1,200,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,000,000	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

251,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	20,245	-	1,050	145.2	20.2	-	-	6.102	7.58	-	-
242,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	18,673	-	1,320	-120.5	23.4	-	-	6.218	6.72	-	24
265,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	20,045	-	410	-171.5	21	-	-	6.128	7	-	23
872,000	<1,000	2,820,000	-	-	-	-	-	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
850,000	<1,000	3,140,000	-	-	-	-	-	-	1,400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
987,000	<1,000	3,850,000	-	-	-	-	-	-	27,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
827,000	<1,000	3,310,000	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
703,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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19,000	8,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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868,000	<1,000	3,170,000	<4	<4	<2	<2	<2	<2	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,070,000	<1,000	5,240,000	<4	<4	<2	<2	<2	<2	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
975,000	<1,000	3,900,000	<4	<4	<2	<2	<2	<2	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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87,000	<1,000	1,460,000	<4	<4	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
854,000	<1,000	1,220,000	-	-	-	-	-	-	115,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
907,000	-	1,090,000	-	-	-	-	-	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
770,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,000,000	-	-	-	-
850,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,000,000	-	-	-	-
1,100,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,100,000	-	-	-	-
1,400,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,800,000	-	-	-	-
1,000,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,000,000	-	-	-	-
1,100,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,000,000	-	-	-	-
870,000	<10,000	4,200,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,000,000	-	-	-	-
643,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	27,123	-	1,870	-184.2	21.9	-	-	1.168	6.98	-	-
960,000	<10,000	670,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,200,000	-	-	-	-
1,100,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,200,000	-	-	-	-
824,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	4,972	-	2,460	-8.3	21.1	-	-	0.549	7.48	-	-
320,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,500,000	-	-	-	-
1,300,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	22,139	-	1,610	-170.7	19.9	-	-	0.582	6.93	-	-
1,280,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	18,925	-	1,470	-72.5	18.8	-	-	0.81	7.35	-	-
730,000	<10,000	1,400,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,500,000	-	-	-	-
<1,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	22,842	-	1,490	-6.4	18	-	-	1.248	5.11	-	-
79,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	20,532	-	1,190	-57.1	17.3	-	-	1.38	6.65	-	-
1,200,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,040,000	<1,000	-	<4	<4	<2	<2	<2	<2	-	-	-	-	-	27,388	-	1,670	13.2	19.4	-	-	4.852	6.63	-	-
1,040,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	22,917	-	2,980	-55.6	17.2	-	-	5.24	7.58	-	-
380,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
340,000	25,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
990,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,100,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,400,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,200,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,100,000	<10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,528	-	1,200	-	20.6	-229	-	-	6.11	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	15,528	-	1,200	-229	20.6	-	-	-	6.11	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	2	14,237	-	330	-136	18.2	-136	-	-	7.39	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	17,290	-	4,530	-26	18.6	-26	-	-	5.49	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,128	-	-10	-	21.36	-10.5	-	-	5.66	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,372	-	620	-	18.1	-127	-	-	6.43	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,372	15.16	620	-127	18.1	-	-	-	6.43	2.2	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,029	16.135	6,400	-65.5	18.6	-	-	-	6.93	2.8	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,029	-	6,400	-	18.6	-65.5	-	-	6.93	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,362	-	540	-147	21.6	-	-	-	6.62	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	5	15,594	-	370	-157	17.1	-157	-	-	7.63	-	-
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-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	17,650.90	-	-10	125.6	21.54	-	-	-	5.78	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,716	8.13	340	-52.1	19	-	-	-	6.63	2	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,814	-	430	-	18.3	-69.5	-	-	6.62	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,814	8.142	430	-69.5	18.3	-	-	-	6.62	1.7	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,977	8.341	1,070	-80.2	18.4	-	-	-	6.67	2.2	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,977	-	1,070	-	18.4	-80.2	-	-	6.67	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,070	-	750	-	19.9	-13.3	-	-	6.63	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,257	-	4,300	-	18.7	-121.1	-	-	6.96	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,257	-	4,300	-121.1	18.7	-	-	-	6.96	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	2	19,379	-	640	24	18.6	24	-	-	7.24	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,430	-	4,510	79.8	18.4	79.8	-	-	5.79	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,933	-	390	-	18.8	-153.7	-	-	6.78	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,933	12.17	390	-153.7	18.8	-	-	-	6.78	3.7	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,220	-	420	-	17	-103.8	-	-	6.86	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,220	11.53	420	-103.8	17	-	-	-	6.86	2	-
-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	19,013	12.242	660	-10.1	18.6	-	-	-	6.91	3	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,106	-	910	-	19.3	-36.1	-	-	6.9	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,137	-	240	-	19.1	-104.6	-	-	6.88	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,956	-	900	-210	21.3	-	-	-	6.4	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	<1	19,091	-	6,370	-98	18.7	-98	-	-	7.21	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,099	-	560	-	18.5	-70.3	-	-	6.59	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,677	-	460	-	16.5	-51.2	-	-	6.59	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,677	7.541	460	-51.2	16.5	-	-	-	6.59	1.9	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,869	-	1,410	-	18.9	28.1	-	-	6.65	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,419	-	340	-	20.4	32.5	-	-	6.59	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,108	-	860	-	19.6	48.2	-	-	6.57	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,820	-	1,000	-	20.2	-297.6	-	-	6.56	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,820	-	1,000	-297.6	20.2	-	-	-	6.56	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<1	18,332	-	1,040	-305	18	-305	-	-	7.77	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	22,070	-	4,330	-312	19.1	-	-	-	6.42	-	-
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-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	13,603.30	-	110	-328.8	21.46	-	-	-	6.97	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,497	-	420	-	19.5	-337.1	-	-	6.84	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,981	-	500	-	19.5	-331.1	-	-	6.86	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,981	3.965	500	-331.1	19.5	-	-	-	6.86	4	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,658	-	2,050	-	20.4	-37.8	-	-	6.62	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	13	9,504	-	1,670	-93	19.6	-	-	-	8.38	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,504	-	1,670	-	19.6	-93	-	-	8.38	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,280	-	2,400	10.6	22.6	-	-	-	6.88	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,280	-	2,400	-	22.6	10.6	-	-	6.88	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,494	-	1,660	-	20.6	-9.2	-	-	6.61	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,494	-	1,660	-9.2	20.6	-	-	-	6.61	1.1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,756	-	1,040	-	18.8	-67.4	-	-	6.86	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,756	-	1,040	-67.4	18.8	-	-	-	6.86	0.1	-
-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,633	-	1,790	-	18.8	-147	-	-	7.69	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,790	-	2,210	-151.3	19.6	-	-	-	6.68	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,790	-	2,210	-	19.6	-151.3	-	-	6.68	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,652	9.53	630	41.2	20.1	41.2	-	-	6.69	1.2	-

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-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,086	9.91	390	-106.5	18	-	-	-	6.7	3.1	-
-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	22,380	-	370	-	20.1	-5.1	-	-	6.64	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,281	-	1,540	-168	18.8	-168	-	-	6.02	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	1	17,285	-	3,120	-155	21.2	-	-	-	6.97	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,285	-	3,120	-	21.2	-155	-	-	6.97	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	21,830	-	520	-30.1	18.4	-	-	-	6.43	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,830	-	520	-	18.4	-30.1	-	-	6.43	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	24,694.40	-	2,670	-4.5	27.93	-4.5	-	-	6.88	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,062	-	1,440	-	20.3	-146.9	-	-	6.77	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,062	6.595	1,440	-146.9	20.3	-	-	-	6.77	4	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,998	6.527	200	-156.5	18.1	-156.5	-	-	6.71	3.7	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,754	6.118	260	55.6	17.6	-	-	-	6.75	2.7	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,754	-	260	-	17.6	55.6	-	-	6.75	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,771	-	260	-	18.5	-48.8	-	-	6.77	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,000	-	0	-	19.2	-190.2	-	-	6.76	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,189	-	460	-169	19.3	-169	-	-	6.57	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<1	19,606	-	367,000	-182	19.5	-	-	-	7.27	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,606	-	3,670	-	19.5	-182	-	-	7.27	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,790	-	1,070	-150	19.1	-	-	-	6.45	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,790	-	1,070	-	19.1	-150	-	-	6.45	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	22,308.30	-	210	-128.5	21.64	-128.5	-	-	6.79	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,807	-	1,420	-	19.9	-157	-	-	6.66	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,807	5.781	1,420	-157	19.9	-	-	-	6.66	5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,941	5.205	230	-154	18.2	-154	-	-	6.69	2	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,771	6.081	700	-43.3	17.4	-	-	-	6.89	3.3	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,771	-	700	-	17.4	-43.3	-	-	6.89	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,982	-	120	-	19	-49.5	-	-	6.68	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,840	-	0	-	19	-190.3	-	-	6.68	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,870	-	190	-86	20.1	-86	-	-	6.46	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	7	34,137	-	1,160	-68.7	18.7	-	-	-	6.8	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	34,137	-	1,160	-	18.7	-68.7	-	-	6.8	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	36,770	-	1,500	148	20.2	-	-	-	6.11	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	36,770	-	1,500	-	20.2	148	-	-	6.11	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	33,709	-	2,280	-	20	71.2	-	-	6.3	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	33,709	8.42	2,280	71.2	20	-	-	-	6.3	3.4	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	31,571	8.115	440	107.5	17.2	107.5	-	-	6.22	1.8	-
-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	34,701	8.727	2,070	61.5	18.7	61.5	-	-	6.42	1.6	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	13	26,689	-	480	-	20.7	95.2	-	-	6.12	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,306	-	1,830	-3	18.7	-3	-	-	7.54	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	9	4,380	-	4,100	63.5	18	-	-	-	7.28	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,380	-	4,100	-	18	63.5	-	-	7.28	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,397	-	690	193.4	17.8	-	-	-	6.9	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,397	-	690	-	17.8	193.4	-	-	6.9	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	9,930.80	-	260	89.1	18.43	89.1	-	-	7.04	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,665	-	1,150	-	19.2	-76.8	-	-	7.02	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,665	6.69	1,150	-76.8	19.2	-	-	-	7.02	3.8	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,630	7.287	410	48.3	17.1	48.3	-	-	6.93	4.3	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,009	7.138	450	32.3	17.7	-	-	-	6.93	2.8	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,009	-	450	-	17.7	32.3	-	-	6.93	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	22	15,162	-	340	-	18.1	-49.4	-	-	6.89	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,310	-	0	-	18.2	-150.4	-	-	6.84	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	21,997	-	60	26	18	26	-	-	6.28	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	11	17,015	-	5,370	45	18.5	-	-	-	6.79	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,015	-	5,370	-	18.5	45	-	-	6.79	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,759	-	320	20.1	17.6	-	-	-	6.43	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,759	-	320	-	17.6	20.1	-	-	6.43	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	24,297.30	-	110	-12.4	20.12	-12.4	-	-	6.42	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,172	-	780	-	18	-84.6	-	-	6.52	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,172	4.78	780	-84.6	18	-	-	-	6.52	8.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,380	4.972	200	2.5	16.8	2.5	-	-	6.51	4	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,682	5.336	220	21.9	17.1	-	-	-	6.47	3.7	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,682	-	220	-	17.1	21.9	-	-	6.47	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	18	24,128	-	200	-	17.8	-2.9	-	-	6.58	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	22,590	-	0	-	17.5	-64.2	-	-	6.54	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,378	-	-5	-226	18.3	-226	-	-	6.64	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	<1	19,122	-	950	-207	18.3	-	-	-	7.69	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,122	-	950	-	18.3	-207	-	-	7.69	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,510	-	3,030	-141	18.6	-	-	-	6.2	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,510	-	3,030	-	18.6	-141	-	-	6.2	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	25,957.50	-	150	-221.8	22.59	-221.8	-	-	7	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,816	4.82	300	-209.2	19.1	-209.2	-	-	6.77	4	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,423	-	230	-	17.2	-186.9	-	-	6.78	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,423	4.485	230	-186.9	17.2	-	-	-	6.78	2.3	-
-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	24,580	4.938	380	-67.9	17.9	-67.9	-	-	6.77	1.7	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,717	-	190	-	18.9	-76.9	-	-	6.68	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,724	-	230	-	19	-82.9	-	-	6.67	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	19,992	-	880	-142.5	19.5	-142.5	-	-	6.84	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	18,030	-	2,300	86	19.1	-	-	-	6.57	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,030	-	2,300	-	19.1	86	-	-	6.57	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	21,468.50	-	200	17.7	22.9	17.7	-	-	6.69	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,677	-	2,260	-	20.2	-5.4	-	-	6.64	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,677	3.925	2,260	-5.4	20.2	-	-	-	6.64	6	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,809	4.075	270	23	19.7	23	-	-	6.66	2	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,379	4.87	1,330	58.8	18.7	-	-	-	6.7	4.1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,379	-	1,330	-	18.7	58.8	-	-	6.7	-	-
-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,017	-	1,310	-	19.2	60.3	-	-	6.72	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,430	-	0	-	20	-25.2	-	-	6.65	-	-

Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

Ions										Organic	Soluble Metals by ICPAES	Explosives			pH	Physical Parameters				Halogenate				
Calcium	Calcium (filtered)	Chloride	Potassium	Potassium (filtered)	Sodium	Sodium (filtered)	Ionic Balance	Anions Total	Cations Total	Methane	Iron (soluble)	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	pH (lab)	Electrical Conductivity @ 25C (lab)	Total suspended particulates	Total Dissolved Solids (TDS)	TOC	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	meq/L	meq/L	µg/L	µg/L	µg/L	µg/L	µg/L	pH_unit	µS/cm	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
1	1	1	1	1	1	1	0.01	0.01	0.01			4	4	2	0.01	1		10,000	1,000	5	2	2	2	2
												65		550						10	170	160	260	60
		6,000																35,000,000						
																				0.9	0.5	2.5	2.5	4
																7,000								
-	-	3,800	44	-	3,100	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<0.01
-	109	4,720	-	16	-	2,750	0.2	158	158	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	224	6,190	-	12	-	2,710	9.15	200	166	-	-	<4	<4	<2	7.39	18,200	-	12,100,000	10,000	<5	<2	<2	<2	<2
-	260	7,170	-	12	-	3,120	8.9	230	192	-	-	-	-	-	7.92	20,700	-	13,900,000	6,000	-	-	-	-	-
-	295	7,690	-	17	-	3,780	3.2	246	231	-	-	-	-	-	7.44	21,600	-	16,400,000	4,000	-	-	-	-	-
-	181	7,610	-	24	-	3,580	4.44	256	235	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	272	7,990	-	50	-	3,620	5.41	266	239	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	300	7,340	-	54	-	3,410	6.93	227	198	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	263	6,090	-	34	-	3,360	2.46	204	214	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	218	4,650	-	38	-	2,290	5.42	165	148	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	214	5,560	-	54	-	2,800	6.44	173	152	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	203	5,490	-	41	-	2,810	5.18	182	164	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	175	5,150	-	27	-	2,950	0.06	174	174	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	198	6,730	-	18	-	3,240	4.36	224	205	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	322	8,380	-	40	-	3,360	3.3	280	262	-	-	<4	<4	<2	7.46	24,600	-	17,200,000	6,000	<5	<2	<2	<2	<2
-	226	7,450	-	34	-	3,350	1.61	247	239	-	-	-	-	-	7.95	21,600	-	15,100,000	9,000	-	-	-	-	-
-	239	9,010	-	42	-	3,440	5.82	293	260	-	-	-	-	-	7.65	24,000	-	20,400,000	9,000	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	10	123	-	4	-	53	7.08	4.98	4.32	-	-	<4	<4	<2	6.24	524	-	1,070,000	8,000	<5	<2	<2	<2	<2
-	16	93	-	10	-	47	2.08	4.09	3.92	-	-	-	-	-	7.15	452	-	283,000	8,000	-	-	-	-	-
-	16	69	-	10	-	45	0.1	3.74	3.75	-	-	<4	<4	<2	6.63	390	-	304,000	18,000	<5	<2	<2	<2	<2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	-	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	-	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	174	3,970	-	39	-	2,350	0.3	144	145	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	176	4,430	-	35	-	2,160	8.04	156	132	-	-	<4	<4	<2	7.71	14,100	-	8,630,000	6,000	<5	<2	<2	<2	<2
-	178	4,540	-	35	-	2,380	4.17	159	146	-	-	-	-	-	8.06	14,000	-	8,830,000	7,000	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	138	3,720	-	28	-	2,170	0.81	129	127	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	184	5,150	-	31	-	2,460	7.5	176	152	-	-	<4	<4	<2	7.71	15,900	-	10,200,000	4,000	<5	<2	<2	<2	<2
-	191	5,420	-	30	-	2,750	4.27	184	169	-	-	-	-	-	8.04	16,200	-	10,200,000	14,000	-	-	-	-	-
-	197	4,010	-	31	-	2,320	1.44	135	132	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	223	4,770	-	34	-	2,480	6.01	156	138	-	-	<4	<4	<2	7.72	14,600	-	8,850,000	12,000	<5	<2	<2	<2	<2
-	218	5,090	-	33	-	2,680	5.36	165	148	-	-	-	-	-	8.12	14,500	-	8,860,000	17,000	-	-	-	-	-
-	283	7,240	-	16	-	3,380	6.12	236	209	-	-	<4	<4	<2	7.57	21,600	-	14,600,000	6,000	<5	<2	<2	<2	<2
-	289	7,700	-	16	-	3,640	4.96	248	225	-	-	-	-	-	8.02	21,400	-	14,900,000	4,000	-	-	-	-	-
-	286	7,570	-	19	-	3,750	2.99	245	231	-	-	-	-	-	7.55	21,900	-	16,600,000	3,000	-	-	-	-	-
-	286	6,210	-	44	-	2,930	4.22	207	190	-	-	<4	<4	<2	7.67	19,200	-	11,900,000	<1,000	<5	<2	<2	<2	<2
-	318	6,450	-	37	-	2,730	8.97	214	179	-	-	<4	<4	<2	7.82	19,200	-	12,600,000	3,000	<5	<2	<2	<2	<2
168	-	4,200	32	-	2,400	-	3.61	141	131	-	-	-	-	-	7.28	11,100	-	7,620,000	-	-	-	-	-	-
172	-	3,940	31	-	2,400	-	0.99	134	131	-	-	-	-	-	7.47	13,300	-	7,830,000	-	-	-	-	-	-
194	-	3,910	33	-	2,180	-	4.45	130	119	-	-	-	-	-	7.69	12,800	-	8,260,000	-	-	-	-	-	-
214	-	4,600	35	-	2,570	-	3.46	152	142	-	-	-	-	-	7.73	15,800	-	9,120,000	-	-	-	-	-	-
220	-	4,390	35	-	2,690	-	0.73	147	149	-	-	-	-	-	7.66	14,700	-	9,100,000	-	-	-	-	-	-
243	-	6,730	35	-	3,380	-	1.98	232	223	-	-	-	-	-	7.68	16,900	-	14,900,000	-	-	-	-	-	-
255	-	6,720	34	-	3,060	-	7.65	235	202	-	-	-	-	-	7.88	20,000	-	15,000,000	-	-	-	-	-	-

252	-	7,260	36	-	3,670	-	0.94	248	243	-	-	-	-	-	7.45	20,100	-	15,000,000	-	-	-	-	-	-
286	-	6,640	36	-	3,460	-	0.14	233	234	-	-	-	-	-	7.65	23,600	-	16,200,000	-	-	-	-	-	-
275	-	6,970	37	-	3,830	-	2.71	244	257	-	-	-	-	-	7.64	22,600	-	15,600,000	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	168	4,340	-	24	-	2,290	2.81	163	154	-	-	<4	<4	<2	7.1	13,900	-	9,340,000	42,000	<5	<2	<2	<2	<2
-	192	5,320	-	28	-	2,560	7.34	199	172	-	-	-	-	-	7.32	17,800	-	12,800,000	91,000	-	-	-	-	-
136	-	3,430	25	-	2,160	-	1.52	119	115	11	-	<4	<4	<2	7.87	11,000	-	7,020,000	-	<5	<2	<2	<2	<2
130	-	3,950	25	-	2,370	-	3.5	136	127	-	-	-	-	-	7.61	12,600	-	7,370,000	-	-	-	-	-	-
160	-	3,420	24	-	2,150	-	0.69	120	118	-	-	-	-	-	7.63	11,800	-	6,910,000	-	-	-	-	-	-
131	-	2,790	6	-	2,060	-	0.58	111	109	<10	-	<4	<4	<2	7.65	11,000	-	6,850,000	-	<5	<2	<2	<2	<2
100	-	2,700	35	-	2,200	-	-	-	-	<50	-	-	-	-	8.2	8,500	11,000	5,500,000	-	-	-	<1	<1	<1
240	-	3,800	44	-	3,100	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<0.01
240	-	6,600	40	-	4,000	-	-	-	-	<50	-	-	-	-	7.7	20,000	9,800	12,000,000	-	-	-	<1	<1	<1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<0.01
230	-	7,200	49	-	4,000	-	-	-	-	<50	-	-	-	-	8	13,000	14,000	7,600,000	-	-	-	<1	<1	<1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<0.01
470	-	5,700	56	-	4,700	-	-	-	-	440	-	-	-	-	7.6	17,000	14,000	12,000,000	-	-	-	<1	<1	<1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<0.01
-	-	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
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-	-	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	460	9,290	-	60	-	4,550	2.42	292	278	-	-	<4	<4	<2	7.44	26,200	-	20,600,000	14,000	<5	<2	<2	<2	<2
-	456	8,800	-	66	-	4,490	0.62	278	275	-	-	<4	<4	<2	7.45	27,600	-	18,700,000	6,000	<5	<2	<2	<2	<2
-	481	9,490	-	70	-	4,730	1.52	297	288	-	-	-	-	-	7.59	28,400	-	24,400,000	<1,000	-	-	-	-	-
-	273	9,100	-	7	-	4,500	2.44	294	280	-	-	<4	<4	<2	7.16	27,300	-	19,700,000	13,000	<5	<2	<2	<2	<2
-	260	8,740	-	8	-	4,520	<0.01	281	281	-	-	<4	<4	<2	7.07	28,300	-	19,400,000	14,000	<5	<2	<2	<2	<2
-	206	9,830	-	5	-	4,820	3.09	308	290	-	-	-	-	-	7.21	28,300	-	25,400,000	9,000	-	-	-	-	-
-	352	11,700	-	31	-	5,690	3.2	376	352	-	-	<4	<4	<2	7.48	33,800	-	25,400,000	11,000	<5	<2	<2	<2	<2
-	349	11,200	-	32	-	5,820	0.01	362	362	-	-	<4	<4	<2	7.36	37,200	-	26,400,000	9,000	<5	<2	<2	<2	<2
-	375	12,300	-	33	-	6,430	0.75	391	397	-	-	-	-	-	7.53	36,700	-	36,400,000	8,000	-	-	-	-	-
-	99	615	-	40	-	420	0.63	25.4	25	-	-	<4	<4	<2	7.15	2,510	-	1,530,000	7,000	<5	<2	<2	<2	<2
-	110	624	-	43	-	386	4.95	25.9	23.5	-	-	<4	<4	<2	6.86	2,340	-	1,500,000	8,000	<5	<2	<2	<2	<2
-	132	657	-	44	-	393	6.37	28.4	25	-	-	-	-	-	7.31	2,410	-	1,620,000	8,000	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<4	<4	<2	-	-	-	-	13,000	<5	<2	<2	<2	<2
-	47	1,030	-	13	-	786	1.76	42	43.5	-	-	<4	<4	<2	6.75	4,020	-	2,700,000	6,000	<5	<2	<2	<2	<2
-	34	1,210	-	13	-	839	3.35	48.4	45.3	-	-	-	-	-	7.13	4,680	-	3,170,000	9,000	-	-	-	-	-
-	237	9,360	-	44	-	4,620	3.43	327	305	-	-	<4	<4	<2	7.49	27,600	-	21,100,000	6,000	<5	<2	<2	<2	<2
-	225	8,800	-	47	-	4,560	1.3	309	301	-	-	-	-	-	7.24	28,700	-	20,100,000	5,000	-	-	-	-	-
-	247	9,550	-	50	-	4,840	2.22	335	320	-	-	-	-	-	7.44	29,400	-	27,100,000	16,000	-	-	-	-	-
-	372	7,370	-	78	-	3,700	0.99	219	215	-	-	<4	<4	<2	7.62	20,600	-	14,900,000	10,000	<5	<2	<2	<2	<2
-	418	9,230	-	69	-	4,450	2.82	274	259	-	-	<4	<4	<2	7.31	27,900	-	19,400,000	4,000	<5	<2	<2	<2	<2
-	506	10,200	-	78	-	5,000	1.57	301	292	-	-	-	-	-	7.46	29,800	-	25,000,000	6,000	-	-	-	-	-
-	164	7,930	-	22	-	3,770	4.05	248	228	-	-	<4	<4	<2	7.58	22,400	-	16,200,000	7,000	<5	<2	<2	<2	<2
-	199	8,570	-	28	-	3,910	6.33	270	238	-	-	-	-	-	7.41	26,600	-	18,200,000	7,000	-	-	-	-	-
-	272	9,150	-	45	-	4,670	1.85	295	284	-	-	-	-	-	7.55	27,100	-	22,800,000	11,000	-	-	-	-	-
-	222	5,530	-	28	-	2,750	8.26	191	162	-	-	<4	<4	<2	7.9	17,400	-	10,500,000	2,000	<5	<2	<2	<2	<2
-	-	8,300	55	-	5,100	-	-	-	-	<50	-	-	-	-	7.6	21,000	-	14,000,000	-	-	-	<1	<1	<1
-	82	235	-	48	-	128	1.7	11.3	10.9	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	210	6,070	-	32	-	2,960	4.01	205	189	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	169	7,090	-	26	-	3,370	3.94	233	215	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	184	7,900	-	22	-	3,800	4.24	264	243	-	-	<4	<4	<2	7.44	23,900	-	16,600,000	5,000	<5	<2	<2	<2	<2
-	194	7,860	-	22	-	3,860	1.79	258	249	-	-	-	-	-	7.94	23,400	-	16,200,000	18,000	-	-	-	-	-
-	49	64	-	64	-	66	0.4	6.9	6.95	-	-	<4	<4	<2	11	810	-	448,000	13,000	<5	<2	<2	<2	<2
-	50	75	-	63	-	95	16.2	6.47	8.98	-	-	<4	<4	<2	9.62	648	-	472,000	7,000	<5	<2	<2	<2	<2
-	212	8,480	-	30	-	3,930	3.82	286	264	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	292	8,810	-	56	-	4,480	2.16	296	309	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
-	328	6,200	-	33	-	2,920	1.93	207	199	-	-	<4	<4	<2	7.7	18,600	-	11,700,000	15,000	<5	<2	<2	<2	<2
-	233	6,150	-	30	-	2,610	8.47	206	174	-	-	<4	<4	<2	7.42	18,800	-	12,200,000	21,000	<5	<2	<2	<2	<2
-	329	6,510	-	31	-	3,140	2.41	212	202	-	-	<4	<4	<2	7.74	19,300	-	11,200,000	2,000	<5	<2	<2	<2	<2
-	299	7,540	-	33	-	3,790	0.82	248	244	-	-	<4	<4	<2	7.84	22,100	-	14,200,000	3,000	<5	<2	<2	<2	<2
-	424	6,670	-	37	-	3,400	0.7	211	214	-	-	<4	<4	<2	7.77	20,400	-	12,700,000	1,000	<5	<2	<2	<2	<2
-	362	7,400	-	35	-	3,210	7.32	232	201	-	-	<4	<4	<2	7.86	21,300	-	13,500,000	3,000	<5	<2	<2	<2	<2
480	-	8,300	55	-	5,100	-	-	-	-	<50	-	-	-	-	7.6	21,000	130,000	14,000,000	-	-	-	<1	<1	<1
480	-	8,300	55	-	5,100	-	-	-	-	<50	-	-	-	-	7.6	21,000	130,000	-	-	-	-	<1	<1	<1
640	-	8,700	70	-	6,600	-	-	-	-	-	-	-	-	-	7.7	27,000	68,000	17,000,000	-	-	-	-	-	-
390	-	8,200	40	-	4,300	-	-	-	-	-	-	-	-	-	7.8	27,000	130,000	-	-	-	-	-	-	-
390	-	14,000	47	-	6,800	-	-	-	-	<50	-	-	-	-	7.6	26,000	43,000	-	-	-	-	<1	<1	<1
470	-	7,900	56	-	7,400	-	-	-	-	-	-	-	-	-	7.5	32,000	170,000	-	-	-	-	-	-	-
290	-	9,500	34	-	5,100	-	-	-	-	-	-	-	-	-	7.8	30,000	270,000	-	-	-	-	-	-	-
280	-	19,000	34	-	4,100	-	-	-	-	<50	-	-	-	-	8.1	22,000	1,400,000	15,000,000	-	-	-	<1	<1	<1
270	-	11,000	29	-	5,000	-	-	-	-	-	-	-	-	-	7.8	30,000	260,000	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	504	6,820	-	42	-	3,410	1.58	198	192	-	-	<4	<4	<2	6.97	19,400	-	14,700,000	9,000	<5	<2	<2	<2	<2
-	442	6,760	-	46	-	3,670	1.45	196	202	-	-	-	-	-	7.89	20,300	-	14,000,000	7,000	-	-	-	-	-
-	444	6,870	-	48	-	3,730	1.13	200	204	-	-	<4	<4	<2	7.46	21,100	-	15,200,000	10,000	<5	<2	<2	<2	<2
284	-	5,880	42	-	3,300	-	0.05	201	201	-	-	-	-	-	7.72	20,700	-	13,900,000	-	-	-	-	-	-
311	-	5,520	42	-	3,290	-	2.26	198	207	-	-	-	-	-	-	18,600	-	-	-	-	-	-	-	-
292	-	6,540	41	-	3,580	-	1.07	239	234	-	-	-	-	-	7.58	19,400	-	15,100,000	-	-	-	-	-	-
370	-	8,980	43	-	4,800	-	0.8	272	276	791	-	<4	<4	<2	7.41	27,200	-	18,700,000	-	<5	<2	<2	<2	<2
149	-	5,880	4	-	2,950	-	4.79	190	173	-	-	-	-	-	-	-	-	-	-	<5	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	-	1,240	2	-	590	-	11.8	42.1	33.2	-	-	-	-	-	7.85	4,440	-	2,470,000	-	-	-	-	-	-
188	-	4,400	46	-	2,030	-	5.14	125	113	-	-	<4	<4	<2	-	-	-	-	-	<5	<2	<2	<2	<2
4	-	147	4	-	159	-	5.78	8.47	7.55	-	-	-	-	-	9.31	826	-	468,000	-	-	-	-	-	-
369	-	7,870	80	-	3,850	-	1.95	242	233	11,300	-	<4	<4	<2	7.59	24,700	-	15,400,000	-	<5	<2	<2	<2	<2
268	-	9,730	32	-	5,010	-	1.17	316	323	<10	-	<4	<4	<2	7.49	26,700	-	20,000,000	-	<5	<2	<2	<2	<2
214	-	7,650	29	-	4,010	-	3.95	274	253	<10	-	<4	<4	<2	7.66	23,600	-	17,100,000	-	<5	<2	<2	<2	<2
258	-	7,240	48	-	4,240	-	0.81	245	249	<10	-	<4	<4	<2	7.6	23,900	-	17,000,000	-	<5	<2	<2	<2	<2
394	-	6,860	61	-	4,120	-	3.36	196	210	9,560	-	<4	<4	<2	7.6	21,900	-	13,900,000	-	<5	<2	<2	<2	<2
270	-	5,200	40	-	2,800	-	6.28	167	147	-	-	-	-	-	7.64	16,100	-	10,200,000	-	-	-	-	-	-
230	-	4,930	36	-	3,000	-	1.46	158	153	-	-	-	-	-	7.56	16,000	-	9,440,000	-	-	-	-	-	-
76	-	4,900	6.5	-	3,500	-	-	-	-	<50	-	-	-	-	7.5	18,000	1,800,000	-	-	-	-	<1	<1	<0.01
260	-	9,200	19	-	6,200	-	-	-	-	<50	-	-	-	-	7.1	31,000	570,000	-	-	-	-	<1	<1	<0.01
280	-	11,000	16	-	5,400	-	-	-	-	-	-	-	-	-	7.3	31,000	1,000,000	-	-	-	-	<1	<1	<0.01
58	-	7,500	26	-	3,300	-	-	-	-	<50	-	-	-	-	8.2	20,000	62,000	-	-	-	-	<1	<1	<0.01
440	-	9,500	18	-	5,200	-	-	-	-	<50	-	-	-	-	7.3	32,000	33,000	-	-	-	-	<1	<1	<0.01
380	-	11,000	8.9	-	4,200	-	-	-	-	-	-	-	-	-	7.6	30,000	20,000	-	-	-	-	<1	<1	<0.01
280	-	8,800	12	-	5,300	-	-	-	-	<50	-	-	-	-	7.8	27,000	25,000	-	-	-	-	<1	<1	<1
-	190	9,240	-	5	-	4,520	4.1	288	266	-	-	<4	<4	<2	7.5	25,400	-	17,400,000	9,000	<5	<2	<2	<2	<2
63	-	1,500	<5	-	1,300	-	-	-	-	<50	-	-	-	-	8.1	6,400	25,000	-	-	-	-	<1	<1	<1
85	-	1,500	<5	-	1,100	-	-	-	-	-	-	-	-	-	7.9	6,100	24,000	-	-	-	-	<1	<1	<0.01
-	41	1,080	-	2	-	999	2.6	50.4	53.1	-	-	<4	<4	<2	7.78	4,670	-	2,750,000	11,000	<5	<2	<2	<2	<2
150	-	9,900	9.5	-	4,800	-	-	-	-	-	-	-	-	-	7.2	29,000	25,000	-	-	-	-	-	-	-
-	191	7,010	-	43	-	3,660	1.7	235	228	-	-	<4	<4	<2	7.4	19,700	-	13,100,000	20,000	<5	<2	<2	<2	<2
-	203	7,110	-	41	-	3,330	6.3	239	211	-	-	-	-	-	7.87	21,500	-	17,400,000	2,000	-	-	-	-	-
220	-	1,200	18	-	790	-	-	-	-	150	-	-	-	-	7.3	5,800	75,000	-	-	-	-	<1	<1	<1
-	18	7,890	-	4	-	3,630	7.56	245	210	-	-	<4	<4	<2	4.92	21,400	-	14,300,000	24,000	<5	<2	<2	<2	<2
-	34	8,600	-	5	-	3,800	8.93	270	225	-	-	-	-	-	6.38	25,800	-	23,000,000	15,000	-	-	-	-	-
250	-	5,500	38	-	3,500	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1
-	360	9,050	-	27	-	4,410	2.51	306	291	-	-	<4	<4	<2	7.15	25,500	-	19,100,000	18,000	<5	<2	<2	<2	<2
-	381	9,030	-	31	-	4,400	2.58	308	292	-	-	-	-	-	7.46	27,400	-	25,700,000	10,000	-	-	-	-	-
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370	-	9,900	36	-	4,900	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	-	8,500	24	-	5,000	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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280	-	8,300	44	-	4,700	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1
320	-	8,600	45	-	5,400	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1
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d Benzenes					Halogenated Hydrocarbons																			
2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Pentachlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	Chlorinated hydrocarbons EPAVic		Other chlorinated hydrocarbons EPAVic	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloropropene	1,1-dichloroethane	1,2-Dichloroethene	1,1-dichloroethene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
5	5	5	5	2	5	50	50	5	50				5	5	5	5	5	5		5	5	5	5	5
			55	2										270	400	6,500				700			1,900	900
			15	0.03																				
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

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-	<1	<1	<1	-	<1	<1	<1	<1	<1	<5	-	-	<1	<1	<1	<1	-	<1	-	<1	<1	-	<1	<1
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

Chlorinated Hydrocarbons																							Herbicides	
1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorocyclopentadiene	Hexachloroethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	trichloroethane (1,1,1 & 1,1,2)	2,4,5-Trichlorophenoxy-propanoic acid	Pronamide
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
5	5		5	5	5	5	50	5	50	5	5	5		10	2	2	5	5	5	5	50			2
1,100					240			770					4,000		360		330	70			100			
																0.1								
<1	-	<1	<1	<1	<1	<1	<1	<5	<1	<0.01	<1	<1	0.13	-	-	-	-	<0.02	<1	-	<0.05	<0.01	-	-
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<1	-	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	-	<1	-
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<1	-	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	-	<10	-
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<1	-	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	-	<10	-
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

Inorganics										Nutrients								Monocylic aromatic hydrocarbons						
Fluoride	Reactive Phosphorus as P (Orthophosphate as P)	Total Phosphorus as P (Organic Phosphate as P)	Sulfate as SO4	Sulfate as SO4 (filtered)	Aggressivity	Total Suspended Solids (TSS)	Nitrogen (Organic)	Nitrogen (Total Oxidised)	Reactive Phosphorus as P	Ammonia as N	Nitrite + Nitrate as N	Nitrate (as NO3-N)	Nitrite (as NO2-N)	Nitrogen (Total)	Phosphorus	Total Kjeldahl Nitrogen (TKN)	Phosphate total (P)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	Styrene	Total MAH	n-butylbenzene	n-propylbenzene
µg/L	µg/L	µg/L	µg/L	µg/L	-	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
100	10	10	1,000	1,000					10	10	10	10	10	100	10	100		5	5	5	5		5	5
										900										30				
			1,000,000	1,000,000																				
														100	5									
						50,000				900				1,720	140									
<500	-	-	320,000	-	-	-	-	-	-	3,200	<50	<20	<20	4,900	<500	4,900	-	<1	<1	<1	<1	44	-	-
-	<10	30	-	702,000	-	-	-	-	-	<100	80	60	20	600	-	500	-	<5	<5	<5	<5	-	<5	<5
-	<10	180	-	487,000	-	-	-	-	-	360	170	160	10	1,600	-	1,400	-	<5	<5	<5	<5	-	<5	<5
-	<10	1,290	-	541,000	-	-	-	-	-	630	30	30	<10	3,300	-	3,300	-	-	-	-	-	-	-	-
-	<10	1,030	-	562,000	-	-	-	-	-	600	<10	<10	<10	2,300	-	2,300	-	-	-	-	-	-	-	-
-	<10	280	-	1,110,000	-	-	-	-	-	<100	80	20	60	1,200	-	1,100	-	<5	<5	<5	<5	-	<5	<5
-	<10	<50	-	858,000	-	-	-	-	-	480	<10	<10	<10	700	-	700	-	<5	<5	<5	<5	-	<5	<5
-	<10	200	-	146,000	-	-	-	-	-	4,360	<10	<10	<10	5,400	-	5,400	-	<5	<5	<5	<5	-	<5	<5
-	<10	140	-	486,000	-	-	-	-	-	1,120	<10	<10	<10	1,500	-	1,500	-	<5	<5	<5	<5	-	<5	<5
-	<10	60	-	611,000	-	-	-	-	-	2,620	10	10	<10	2,800	-	2,800	-	<5	<5	<5	<5	-	<5	<5
-	10	210	-	22,000	-	-	-	-	-	4,910	<10	<10	<10	7,000	-	7,000	-	<5	<5	<5	<5	-	<5	<5
-	<10	330	-	135,000	-	-	-	-	-	2,700	<10	<10	<10	5,000	-	5,000	-	<5	<5	<5	<5	-	<5	<5
-	<10	2,050	-	586,000	-	-	-	-	-	<100	<10	<10	<10	4,200	-	4,200	-	<5	<5	<5	<5	-	<5	<5
-	<10	110	-	631,000	-	-	-	-	-	700	30	30	<10	800	-	800	-	<5	<5	<5	<5	-	<5	<5
-	<10	110	-	947,000	-	-	-	-	-	110	<10	<10	<10	<500	-	<500	-	<5	<5	<5	<5	-	<5	<5
-	<10	100	-	860,000	-	-	-	-	-	250	60	40	20	800	-	700	-	-	-	-	-	-	-	-
-	<10	140	-	961,000	-	-	-	-	-	120	170	140	30	<500	-	<500	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5
-	400	1,230	-	34,000	-	-	-	-	-	120	900	780	120	4,800	-	3,900	-	<5	<5	<5	<5	-	<5	<5
-	410	850	-	-	-	-	-	-	-	100	830	820	10	2,700	-	1,900	-	-	-	-	-	-	-	-
-	820	1,230	-	-	-	-	-	-	-	5,840	20	20	<10	7,800	-	7,800	-	<5	<5	<5	<5	-	<5	<5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5
-	<10	50	-	457,000	-	-	-	-	-	1,260	70	70	<10	1,700	-	1,600	-	<5	<5	<5	<5	-	<5	<5
-	<10	150	-	454,000	-	-	-	-	-	1,160	30	10	20	1,200	-	1,200	-	<5	<5	<5	<5	-	<5	<5
-	<10	60	-	496,000	-	-	-	-	-	1,080	<10	<10	20	1,300	-	1,300	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<10	<20	-	278,000	-	-	-	-	-	980	<10	<10	<10	1,200	-	1,200	-	<5	<5	<5	<5	-	<5	<5
-	<10	60	-	446,000	-	-	-	-	-	690	40	20	20	800	-	800	-	<5	<5	<5	<5	-	<5	<5
-	<10	70	-	471,000	-	-	-	-	-	750	130	20	110	1,000	-	900	-	-	-	-	-	-	-	-
-	<10	<20	-	355,000	-	-	-	-	-	2,810	<10	<10	<10	3,500	-	3,500	-	<5	<5	<5	<5	-	<5	<5
-	<10	140	-	277,000	-	-	-	-	-	3,570	3,110	3,110	<10	6,900	-	3,800	-	<5	<5	<5	<5	-	<5	<5
-	<10	60	-	264,000	-	-	-	-	-	3,350	<10	<10	<10	3,200	-	3,200	-	-	-	-	-	-	-	-
-	<10	120	-	577,000	-	-	-	-	-	820	110	20	90	1,000	-	900	-	<5	<5	<5	<5	-	<5	<5
-	<10	16,200	-	569,000	-	-	-	-	-	120	20	<10	50	28,300	-	28,300	-	-	-	-	-	-	-	-
-	<10	4,150	-	544,000	-	-	-	-	-	250	60	20	40	3,900	-	3,800	-	-	-	-	-	-	-	-
-	<10	940	-	-	-	-	-	-	-	1,320	<10	<10	<10	3,400	-	3,400	-	<5	<5	<5	<5	-	<5	<5
-	<10	1,340	-	-	-	-	-	-	-	890	<10	<10	<10	3,700	-	3,700	-	<5	<5	<5	<5	-	<5	<5
100	-	-	270,000	-	-	6,000	-	-	<20	3,220	<10	<10	<10	5,600	<20	5,600	-	-	-	-	-	-	-	-
200	-	-	337,000	-	-	11,000	-	-	<10	3,250	<10	<10	<10	3,100	<10	-	-	-	-	-	-	-	-	-
200	-	-	207,000	-	-	27,000	-	-	<10	4,140	20	20	<10	3,600	<20	3,600	-	-	-	-	-	-	-	-
100	-	-	155,000	-	-	26,000	-	-	<10	3,360	<10	<10	<10	3,300	<20	3,300	-	-	-	-	-	-	-	-
100	-	-	141,000	-	-	20,000	-	-	<10	3,800	<10	<10	<10	3,400	<20	3,400	-	-	-	-	-	-	-	-
200	-	-	824,000	-	-	93,000	-	-	<10	30	2,010	2,000	10	2,300	<20	300	-	-	-	-	-	-	-	-
200	-	-	944,000	-	-	174,000	-	-	<10	380	2,080	2,070	10	3,100	70	1,000	-	-	-	-	-	-	-	-

Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

200	-	-	821,000	-	-	18,000	-	-	50	590	60	60	<10	700	50	600	-	-	-	-	-	-	-	-
100	-	-	896,000	-	-	22,000	-	-	<10	600	<10	<10	<10	800	<50	800	-	-	-	-	-	-	-	-
100	-	-	963,000	-	-	44,000	-	-	<10	990	20	20	<10	1,300	100	1,300	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5
-	<10	100	-	1,310,000	-	-	-	-	-	110	130	110	20	1,100	-	1,000	-	<5	<5	<5	<5	-	<5	<5
-	<10	230	-	1,490,000	-	-	-	-	-	500	10	<10	10	2,000	-	2,000	-	-	-	-	-	-	-	-
200	-	-	183,000	-	-	21,000	-	-	<10	2,780	<10	<10	<10	2,800	220	2,800	-	<5	<5	<5	<5	-	<5	<5
200	-	-	202,000	-	-	<5,000	-	-	80	2,600	40	40	<10	2,900	90	2,900	-	-	-	-	-	-	-	-
100	-	-	196,000	-	-	9,000	-	-	<10	2,300	<10	<10	<10	2,300	80	2,300	-	-	-	-	-	-	-	-
800	-	-	918,000	-	-	187,000	-	-	<10	90	20	20	<10	16,100	7,330	16,100	-	<5	<5	<5	<5	-	<5	<5
<500	-	-	410,000	-	-	11,000	-	-	20	1,500	1,900	80	1,800	4,900	20	3,000	-	<1	<1	<1	<1	<3	-	-
<500	-	-	320,000	-	-	-	-	-	-	3,200	<50	<20	<20	-	-	4,900	-	<1	<1	<1	<1	44	-	-
<500	-	-	750,000	-	-	9,800	-	-	140	1,600	<50	<20	<20	900	10	900	-	<1	<1	<1	<1	3	-	-
-	-	-	-	-	-	-	-	-	10	1,200	<50	<20	<20	3,600	550	3,600	-	<1	<1	<1	<1	5	-	-
<500	-	-	210,000	-	-	14,000	-	-	-	3,800	<50	<20	<20	4,500	10	4,500	-	<1	<1	<1	<1	<3	-	-
-	-	-	-	-	-	-	<200	-	-	2,900	840	40	800	3,240	-	2,400	-	<1	<1	<1	<1	<3	-	-
<500	-	-	820,000	-	-	14,000	-	-	-	290	<50	<20	<20	400	<10	400	-	<1	<1	<1	<1	<3	-	-
-	-	-	-	-	-	-	540	-	-	360	<50	<20	<20	900	-	900	-	<1	<1	<1	<1	<3	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5
-	<10	200	-	686,000	-	-	-	-	-	5,160	20	10	10	6,000	-	6,000	-	<5	<5	<5	<5	-	<5	<5
-	50	200	-	676,000	-	-	-	-	-	4,360	<10	<10	10	5,300	-	5,300	-	<5	<5	<5	<5	-	<5	<5
-	<10	280	-	637,000	-	-	-	-	-	4,810	<10	<10	<10	5,400	-	5,400	-	-	-	-	-	-	-	-
-	<10	370	-	1,440,000	-	-	-	-	-	820	<10	<10	<10	1,900	-	1,900	-	<5	<5	<5	<5	-	<5	<5
-	<10	300	-	1,310,000	-	-	-	-	-	900	<10	<10	<10	1,600	-	1,600	-	<5	<5	<5	<5	-	<5	<5
-	<10	120	-	1,190,000	-	-	-	-	-	410	2,400	2,400	<10	3,000	-	600	-	-	-	-	-	-	-	-
-	<10	570	-	1,280,000	-	-	-	-	-	1,380	<10	<10	20	3,300	-	3,300	-	<5	<5	<5	<5	-	<5	<5
-	<10	3,010	-	1,300,000	-	-	-	-	-	2,390	<10	<10	20	9,600	-	9,600	-	<5	<5	<5	<5	-	<5	<5
-	<10	5,080	-	1,240,000	-	-	-	-	-	140	1,300	1,290	10	15,900	-	14,600	-	-	-	-	-	-	-	-
-	<10	50	-	156,000	-	-	-	-	-	900	<10	<10	<10	1,200	-	1,200	-	<5	<5	<5	<5	-	<5	<5
-	<10	140	-	158,000	-	-	-	-	-	820	40	40	<10	1,600	-	1,600	-	<5	<5	<5	<5	-	<5	<5
-	<10	300	-	175,000	-	-	-	-	-	690	<10	<10	<10	<1,000	-	<1,000	-	-	-	-	-	-	-	-
-	-	8,620	-	-	-	-	-	-	-	580	40	-	-	16,200	-	16,200	-	<5	<5	<5	<5	-	<5	<5
-	<10	1,910	-	360,000	-	-	-	-	-	400	1,560	1,540	20	6,000	-	4,400	-	<5	<5	<5	<5	-	<5	<5
-	<10	4,520	-	373,000	-	-	-	-	-	190	700	690	10	6,100	-	5,400	-	-	-	-	-	-	-	-
-	<10	3,740	-	1,850,000	-	-	-	-	-	170	<10	<10	<10	8,500	-	8,500	-	<5	<5	<5	<5	-	<5	<5
-	<10	140	-	1,760,000	-	-	-	-	-	230	<10	<10	<10	<1,000	-	<1,000	-	-	-	-	-	-	-	-
-	<10	200	-	1,990,000	-	-	-	-	-	90	<10	<10	<10	<500	-	<500	-	-	-	-	-	-	-	-
-	30	370	-	32,000	-	-	-	-	-	7,770	50	20	30	9,800	-	9,800	-	<5	<5	<5	<5	-	<5	<5
-	<10	<100	-	10,000	-	-	-	-	-	8,160	<10	<10	<10	8,900	-	8,900	-	<5	<5	<5	<5	-	<5	<5
-	<10	460	-	3,000	-	-	-	-	-	8,000	50	50	<10	9,400	-	9,400	-	-	-	-	-	-	-	-
-	<10	760	-	347,000	-	-	-	-	-	1,050	170	170	<10	3,200	-	3,000	-	<5	<5	<5	<5	-	<5	<5
-	60	70	-	371,000	-	-	-	-	-	1,300	<10	<10	<10	1,900	-	1,900	-	-	-	-	-	-	-	-
-	<10	180	-	730,000	-	-	-	-	-	2,420	20	20	<10	3,100	-	3,100	-	-	-	-	-	-	-	-
-	<10	5,390	-	-	-	-	-	-	-	390	<10	<10	<10	6,900	-	6,900	-	<5	<5	<5	<5	-	<5	<5
1,000	-	-	850,000	-	-	130,000	-	-	70	3,400	<50	<20	<20	2,900	<10	-	-	<1	<1	<1	<1	<3	-	-
-	<10	60	-	93,000	-	-	-	-	-	330	1,630	1,570	60	3,200	-	1,600	-	<5	<5	<5	<5	-	<5	<5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	<10	110	-	716,000	-	-	-	-	-	530	100	100	<10	1,500	-	1,400	-	<5	<5	<5	<5	-	<5	<5
-	<10	80	-	704,000	-	-	-	-	-	940	<10	<10	<10	1,000	-	1,000	-	<5	<5	<5	<5	-	<5	<5
-	<10	340	-	906,000	-	-	-	-	-	450	210	<10	250	2,300	-	2,100	-	<5	<5	<5	<5	-	<5	<5
-	<10	<50	-	892,000	-	-	-	-	-	600	580	<10	760	1,400	-	800	-	-	-	-	-	-	-	-
-	<10	130	-	115,000	-	-	-	-	-	570	4,140	3,300	840	6,100	-	2,000	-	<5	<5	<5	<5	-	<5	<5
-	<10	340	-	120,000	-	-	-	-	-	650	2,100	1,120	980	4,700	-	2,600	-	<5	<5	<5	<5	-	<5	<5
-	<10	<50	-	1,330,000	-	-	-	-	-	810	<10	<10	<10	1,000	-	1,000	-	<5	<5	<5	<5	-	<5	<5
-	<10	90	-	1,410,000	-	-	-	-	-	850	80	50	30	1,500	-	1,400	-	<5	<5	<5	<5	-	<5	<5
-	<10	190	-	-	-	-	-	-	-	<100	20	20	<10	600	-	600	-	<5	<5	<5	<5	-	<5	<5
-	<10	2,200	-	-	-	-	-	-	-	150	<10	<10	<10	5,700	-	5,700	-	<5	<5	<5	<5	-	<5	<5
-	<10	50	-	-	-	-	-	-	-	1,410	10	<10	20	1,800	-	1,800	-	<5	<5	<5	<5	-	<5	<5
-	<10	800	-	-	-	-	-	-	-	1,730	<10	<10	10	3,700	-	3,700	-	<5	<5	<5	<5	-	<5	<5
-	<10	1,000	-	-	-	-	-	-	-	3,000	<10	<10	<10	5,800	-	5,800	-	<5	<5	<5	<5	-	<5	<5
-	<10	670	-	-	-	-	-	-	-	3,310	200	20	180	5,500	-	5,300	-	<5	<5	<5	<5	-	<5	<5
1,000	-	-	850,000	-	-	130,000	-	-	70	3,400	<50	<20	<20	2,900	<10	2,900	-	<1	<1	<1	<1	<3	-	-
1,000	-	-	850,000	-	-	-	-	-	70	3,400	<50	<20	<20	-	<10	2,900	-	<1	<1	<1	<1	<3	-	-
<500	-	-	950,000	-	-	68,000	-	-	160	4,400	<50	<20	<20	3,400	160	3,400	-	-	-	-	-	-	-	-
<500	-	-	960,000	-	-	-	-	-	70	3,400	-	<20	<20	-	-	-	-	-	-	-	-	-	-	-
<500	-	-	2,100,000	-	-	-	-	-	100	80	<50	<20	<20	-	-	<200	-	<1	<1	<1	<1	<3	-	-
<500	-	-	2,000,000	-	-	-	-	-	110	110	<50	<20	<20	-	-	<200	-	-	-	-	-	-	-	-
<500	-	-	1,900,000	-	-	-	-	-	70	70	-	<20	<20	-	-	-	-	-	-	-	-	-	-	-
2,800	-	-	1,100,000	-	-	1,400,000	-	-	60	990	<50	-	-	2,000	280	2,000	-	<1	<1	<1	<1	3	-	-
<500	-	-	1,200,000	-	-	-	-	-	10	230	-	<20	<20	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	-	<5	<5

-	160	160	-	33,000	-	-	-	-	-	7,650	730	730	<10	8,900	-	8,200	-	<5	<5	<5	<5	-	<5	<5
-	430	<50	-	-	-	-	-	-	-	7,070	<10	<10	<10	8,300	-	8,300	-	-	-	-	-	-	-	-
-	20	60	-	-	-	-	-	-	-	7,500	<10	<10	<10	9,200	-	9,200	-	<5	<5	<5	<5	-	<5	<5
200	-	-	860,000	-	-	19,000	-	-	<10	4,230	<10	<10	<10	4,200	160	4,200	-	-	-	-	-	-	-	-
200	-	-	1,210,000	-	1	19,000	-	-	<10	4,180	20	20	<10	4,300	270	4,300	830	-	-	-	-	-	-	-
200	-	-	1,660,000	-	-	16,000	-	-	10	3,580	<10	<10	<10	4,500	270	4,500	-	-	-	-	-	-	-	-
100	-	-	89,000	-	-	8,000	-	-	<10	2,690	<10	<10	<10	2,800	160	2,800	-	<5	<5	<5	<5	-	<5	<5
400	-	-	502,000	-	-	-	-	-	<10	40	<10	<10	<10	300	110	300	-	<5	<5	<5	<5	-	<5	<5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	-	-	91,000	-	-	187,000	-	-	<10	80	260	260	<10	-	80	-	-	-	-	-	-	-	-	-
<100	-	-	38,000	-	-	-	-	-	<10	2,400	<10	<10	<10	2,300	50	2,300	-	<5	<5	<5	<5	-	<5	<5
200	-	-	12,000	-	-	20,000	-	-	60	470	<10	<10	<10	-	140	-	-	-	-	-	-	-	-	-
300	-	-	137,000	-	-	106,000	-	-	<10	6,480	80	80	<10	6,500	110	6,400	-	<5	<5	<5	<5	-	<5	<5
200	-	-	968,000	-	-	<5,000	-	-	<10	180	110	110	<10	-	90	-	-	<5	<5	<5	<5	-	<5	<5
300	-	-	1,860,000	-	-	<5,000	-	-	<10	470	920	820	100	-	<20	-	-	<5	<5	<5	<5	-	<5	<5
200	-	-	953,000	-	-	<5,000	-	-	<10	4,500	<10	<10	<10	4,800	<50	4,800	-	<5	<5	<5	<5	-	<5	<5
<100	-	-	52,000	-	-	168,000	-	-	<10	9,970	120	120	<10	10,700	240	10,600	-	<5	<5	<5	<5	-	<5	<5
200	-	-	151,000	-	-	330,000	-	-	<10	6,070	160	160	<10	6,900	330	6,700	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	<200	280	-	3,600	-	30	260	4,000	-	3,700	50	<1	<1	<1	<1	<3	-	-
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-	-	-	-	-	-	-	-	<50	-	760	-	<20	<20	1,200	-	1,200	60	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	<200	<50	-	970	-	<20	<20	1,000	-	1,000	30	<1	<1	<1	<1	<3	-	-

Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

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-	-	-	-	-	-	-	-	<50	-	540	-	-	-	800	-	800	70	<1	<1	<1	<1	<3	-	-
-	-	-	-	-	-	-	-	<50	-	360	-	<20	<20	400	-	<200	<50	<1	<1	<1	<1	<3	-	-
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-	-	-	-	-	-	-	-	<50	-	550	-	<20	<20	600	-	600	100	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	<50	-	1,100	-	<20	<20	1,200	-	1,200	270	<1	<1	<1	<1	<3	-	-
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-	-	-	-	-	-	-	-	<50	-	270	-	-	-	400	-	400	<50	<1	<1	<1	<1	<3	-	-
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-	-	-	-	-	-	-	-	<50	-	660	-	<20	<20	<200	-	<200	<50	<1	<1	<1	<1	<3	-	-
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-	-	-	-	-	-	-	<200	<50	-	300	-	<20	<20	300	-	300	20	<1	<1	<1	<1	<3	-	-
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

			PFAS TOPA									Nitroaromatics			Other									
p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (TOPA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (TOPA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (TOPA)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (TOPA)	N-Methyl perfluorooctane sulfonamidoacetic acid (TOPA)	Perfluorooctane sulfonamide (FOSA) (TOPA)	Post-Perfluorohexadecanoic acid (PFHxDA) (TOPA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA) TOPA	Perfluoropentanesulfonic acid (TOP)	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	Penconazole*	Sodium Acifluorfen	2,2,4-Trimethylpentane	Tetradecane	Acetophenone	Caprolactam	Butyric Acid	Carbon Monoxide	Corexit 9527	Glycidaldehyde
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/m3	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
5	5	5										2	2	2					2					
-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-
<5	<5	<5	-	-	-	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2	-	-	-	-	-
<5	<5	<5	-	-	-	-	-	-	-	-	-	<2	<2	<2	-	-	-	-	<2	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	<100	-	-	<0.1	<2	-	<0.1	<1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<50	-	-	<0.05	<0.5	-	<0.05	<10
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-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
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-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	<100	-	-	<0.1	<2	-	<0.1	<10
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-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

				Particle Size	PCBs																				Per and po
Methyl Mercaptan	Nitrofurantoin	Silica (SiO2)	Tebuconazole	Coarse Gravel 19-26.5mm	PCBs (Sum of total)	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOS_	Perfluorooctanesulfonic acid - PFOS	Perfluorooctanoic acid - PFOA	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorononanesulfonic acid (PFNS)	Perfluorononanoic acid (PFNA)
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					1					0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.002	0.0005	0.0005	0.0005	0.0005				0.0005
					0.001																			
														0.00023						19				
-	-	-	-	-	-	-	<0.005	<0.0001	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.005	<0.001	<0.001	<0.001	-	<0.005	-	-	<0.001
-	-	-	-	-	<1	-	-	-	-	0.0614	0.044	0.107	<0.0005	0.0004	<0.0005	<0.002	0.0143	0.0531	<0.0005	<0.0005	-	-	-	<0.0005
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	<1	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.002	<0.0005	0.0022	<0.0005	<0.0005	-	-	-	<0.0005
-	-	-	-	-	<1	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	<0.0005
-	-	-	-	-	<1	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.002	<0.0005	0.0012	<0.0005	<0.0005	-	-	-	<0.0005
-	-	-	-	-	<1	-	-	-	-	<0.0005	<0.0005	0.0006	<0.0005	<0.0003	<0.0005	<0.002	0.0007	0.0008	<0.0005	0.0005	-	-	-	<0.0005
-	-	-	-	-	<1	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	<0.0005
-	-	-	-	-	<1	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	<0.0005
-	-	-	-	-	<1	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	<0.0005
-	-	-	-	-	<1	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.002	<0.0005	0.0016	<0.0005	0.0017	-	-	-	<0.0005
-	-	-	-	-	<1	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	<0.0005
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.004	<0.0008	<0.0008	<0.0008	<0.0008	-	-	-	<0.0008
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
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-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.004	0.0013	0.0012	<0.0008	<0.0008	-	-	-	<0.0008
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.004	<0.0008	<0.0008	<0.0008	<0.0008	-	-	-	<0.0008
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	-	-	<0.02

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-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	-	-	<0.02
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-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	-	-	<0.02
-	-	-	-	-	-	<0.05	<0.05	0.0002	<0.01	<0.001	<0.001	<0.001	<0.001	0.0002	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
-	-	-	-	-	-	<0.005	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001
-	-	-	-	-	-	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	0.001	<0.001	0.006	<0.001	<0.001	<0.001
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	<0.05	<0.05	<0.0001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	<0.05	<0.05	<0.0001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.10	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	<0.05	<0.05	<0.0001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
-	-	-	-	-	-	<0.05	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
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-	-	-	-	-	-	<0.05	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
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-	-	-	-	-	-	<0.05	<0.05	0.0002	<0.01	<0.001	<0.001	<0.001	<0.001	0.0002	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
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-	-	-	-	-	<1	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05
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-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	-	-	<0.02
-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	-	-	<0.02
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-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	-	-	<0.02
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-	-	-	-	-	-	<0.05	-	-	-	0.003	0.001	0.002	<0.001	0.0004	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	0.003	<0.001	<0.01
-	-	-	-	-	-	<0.05	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
-	-	-	-	-	-	<0.05	-	-	-	<0.001	<0.001	<0.001	<0.001	0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
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-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	0.5	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	<0.05	-	-	-	0.005	<0.001	0.004	<0.001	0.0015	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
-	-	-	-	-	-	<0.05	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
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-	-	-	-	-	-	<0.05	-	-	-	0.001	<0.001	<0.001	<0.001	0.0005	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	<0.01	-	<0.1	<0.02	<0.02	<0.02	<0.01	-	-	-	-
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-	-	-	-	-	-	<0.05	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
-	-	-	-	-	-	<0.05	-	-	-	<0.001	<0.001	<0.001	<0.001	0.0003	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.001	<0.01
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-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	-	-	<0.01
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<0.1	-	<0.01	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<0.1	-	<0.01	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	-	-	<0.01
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<10	-	<0.1	<2	<20	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	0.1	-	-	<0.01
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-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01
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lyfluoroalkyl substances																					Pesticides				
Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (PFOSA)	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFAS (WA DER List)	Sum (PFHxS + PFOS)	Sum of PFASs (n=28)	Chlorobenzilate	Carbazole	Demeton-S-methyl	Fenamiphos	Methoprene
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.001	0.001		0.0003	0.0003	0.0003	2	2	0.5	0.5	
<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	<0.001	-	<0.001	<0.001	-	<0.005	<0.001	<0.005	-	-	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.021	<0.001	<0.001	-	0.257	0.107	0.301	<2	<2	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	-	0.0062	<0.0003	0.0062	<2	<2	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	0.002	<0.0003	0.002	<2	<2	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	-	0.0042	<0.0003	0.0042	<2	<2	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	0.0026	0.0006	0.0026	<2	<2	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	-	0.003	<0.0003	0.003	<2	<2	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	0.002	<0.0003	0.002	<2	<2	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	0.002	<0.0003	0.002	<2	<2	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	0.0058	0.0005	0.0058	<2	<2	-	-	-
<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	-	0.001	<0.0003	0.001	<2	<2	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
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-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	-	-	-	-	-
<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.05	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	-	-	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	-	-	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
<0.0008	<0.0008	<0.0008	<0.0008	<0.0019	<0.0008	<0.002	<0.002	<0.0008	<0.0008	<0.002	<0.002	<0.001	0.002	<0.001	<0.001	-	0.002	<0.0008	0.002	<2	<2	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
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<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.001	-	<0.001	<0.001	<0.001	0.007	<0.001	0.007	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	<0.05	0.08	<0.05	<0.05	-	0.08	<0.01	-	<2	<2	<0.5	<0.5	-
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<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	-	0.0157	0.0063	0.0157	<2	<2	-	-	-
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<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.006	<0.001	<0.001	-	0.0083	<0.0003	0.0083	<2	<2	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.05	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.5	<0.5	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.01	<0.01	<0.01	<2	<2	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	0.0054	0.0024	0.0094	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	0.012	<0.001	0.012	-	-	-	-	-
<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	0.5	<0.01	-	<2	<2	<0.5	<0.5	-
<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	0.0037	0.0377	0.0057	0.0377	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
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-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	0.0558	0.8108	0.0178	0.8198	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	<0.01	<0.01	-	<2	<2	<0.5	<0.5	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	0.0165	<0.001	0.0165	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	<0.01	<0.01	<0.05	<0.01	<0.1	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	<0.01	<0.01	<0.05	<0.01	<0.1	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	<0.01	<0.01	<0.05	<0.01	<0.1	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	<0.01	<0.01	<0.05	<0.01	<0.1	-	-	-	-	-
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	<0.01	<0.01	<0.05	<0.01	<0.1	-	-	-	-	<2
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	<0.01	<0.01	<0.05	<0.01	<0.1	-	-	-	-	-
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	<0.01	<0.01	0.1	<0.01	0.1	-	-	-	-	<2
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<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	<0.01	<0.01	<0.05	<0.01	<0.1	-	-	-	-	-
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Table D2: Preliminary Groundwater Results - Airport Portal to Aerotropolis Station

			Phthalates						Solvents															
Parathion	Pirimiphos-methyl	Pirimphos-ethyl	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Carbon disulfide	Allyl chloride	Acetone	Propane Nitrile (Propionitrile)	2-hexanone (MBK)	Isophorone	Vinyl acetate	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2		0.5	10	2	2	2	2	2	50	50	5				50	2	50	2	2	2	2	2	2	2
0.004					1,000	3,700	26																	
0.004							4																	
<1	<10	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-
-	-	<2	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
<2.0	-	<0.5	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
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-	-	<2	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
-	-	<2	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
-	-	<2	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
-	-	<2	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
-	-	<2	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
-	-	<2	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
-	-	<2	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
-	-	<2	<10	<2	<2	<2	<2	<2	<50	<50	<5	-	-	-	<50	<2	<50	<2	<2	<2	<2	<2	<2	<2
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SVOC									Volatile Organic Compounds			
Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin	1,3,5-Trinitrobenzene	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
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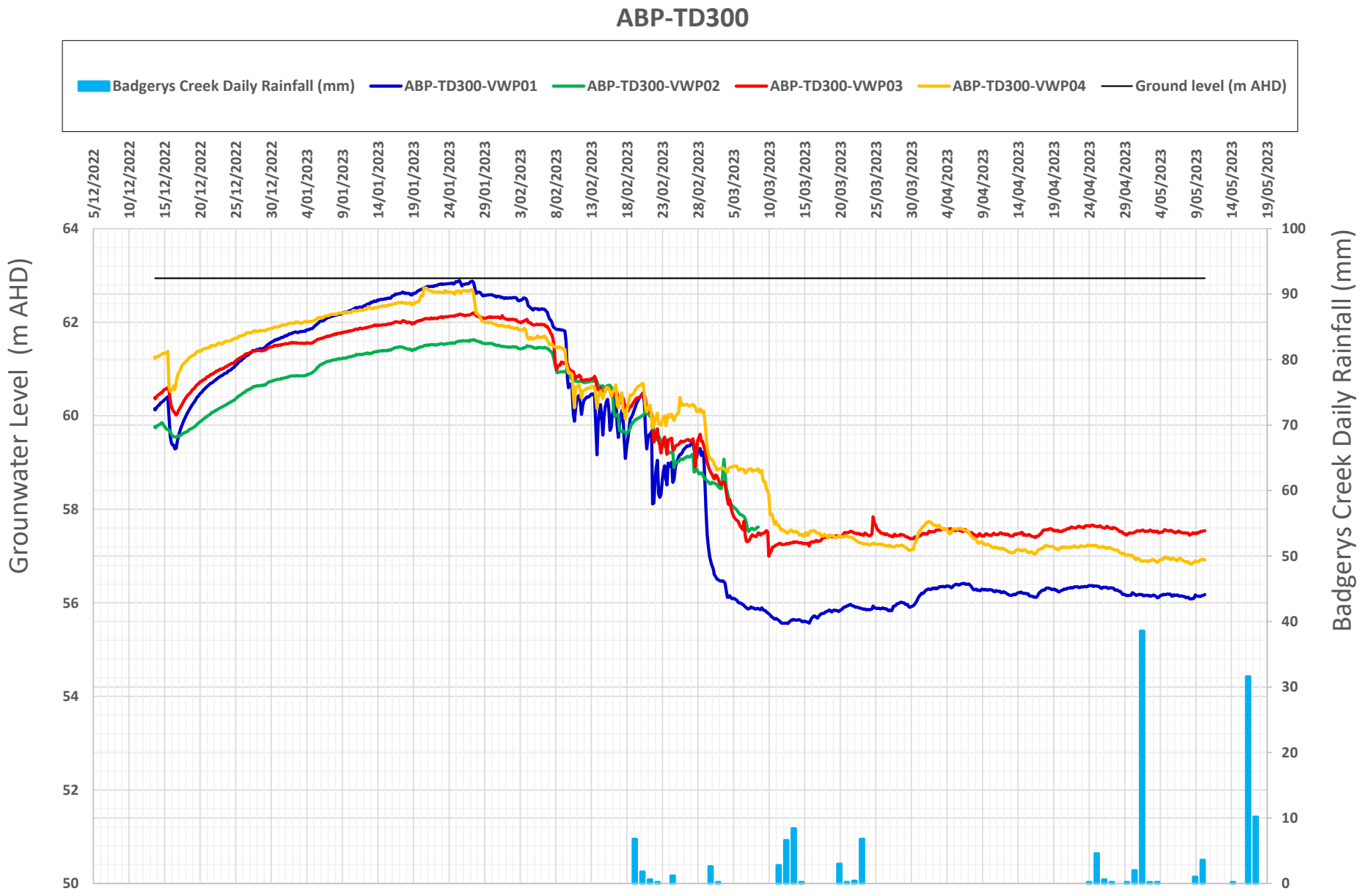
Annexure E Hydrographs to 10 May 2023


ABP-TD300
Badgerys Creek Daily Rainfall (mm)
ABP-TD300-VWP01
ABP-TD300-VWP02
ABP-TD300-VWP03
ABP-TD300-VWP04
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
64
62
60
58
56
54
52
50
100
90
80
70
60
50
40
30
20
10
0
5/12/2022
10/12/2022
15/12/2022
20/12/2022
25/12/2022
30/12/2022
4/01/2023
9/01/2023
14/01/2023
19/01/2023
24/01/2023
29/01/2023
3/02/2023
8/02/2023
13/02/2023
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28/02/2023
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4/04/2023
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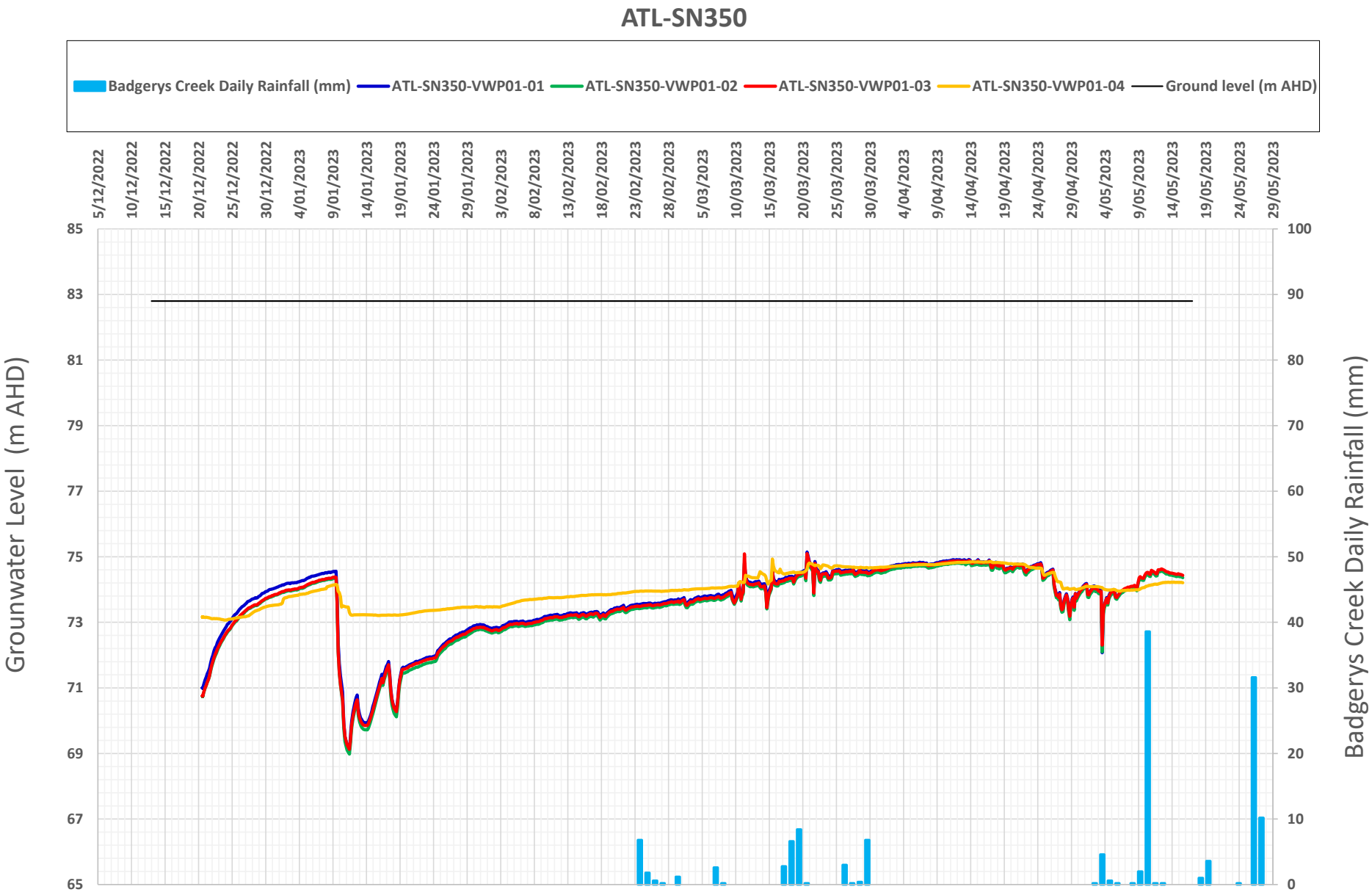
14/05/2023
19/05/2023


ATL-SN350
Badgerys Creek Daily Rainfall (mm)
ATL-SN350-VWP01-01
ATL-SN350-VWP01-02
ATL-SN350-VWP01-03
ATL-SN350-VWP01-04
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
85
83
81
79
77
75
73
71
69
67
65
100
90
80
70
60
50
40
30
20
10
0
5/12/2022
10/12/2022
15/12/2022
20/12/2022
25/12/2022
30/12/2022
4/01/2023
9/01/2023
14/01/2023
19/01/2023
24/01/2023
29/01/2023
3/02/2023
8/02/2023
13/02/2023
18/02/2023
23/02/2023
28/02/2023
5/03/2023
10/03/2023
15/03/2023
20/03/2023
25/03/2023
30/03/2023
4/04/2023
9/04/2023
14/04/2023
19/04/2023
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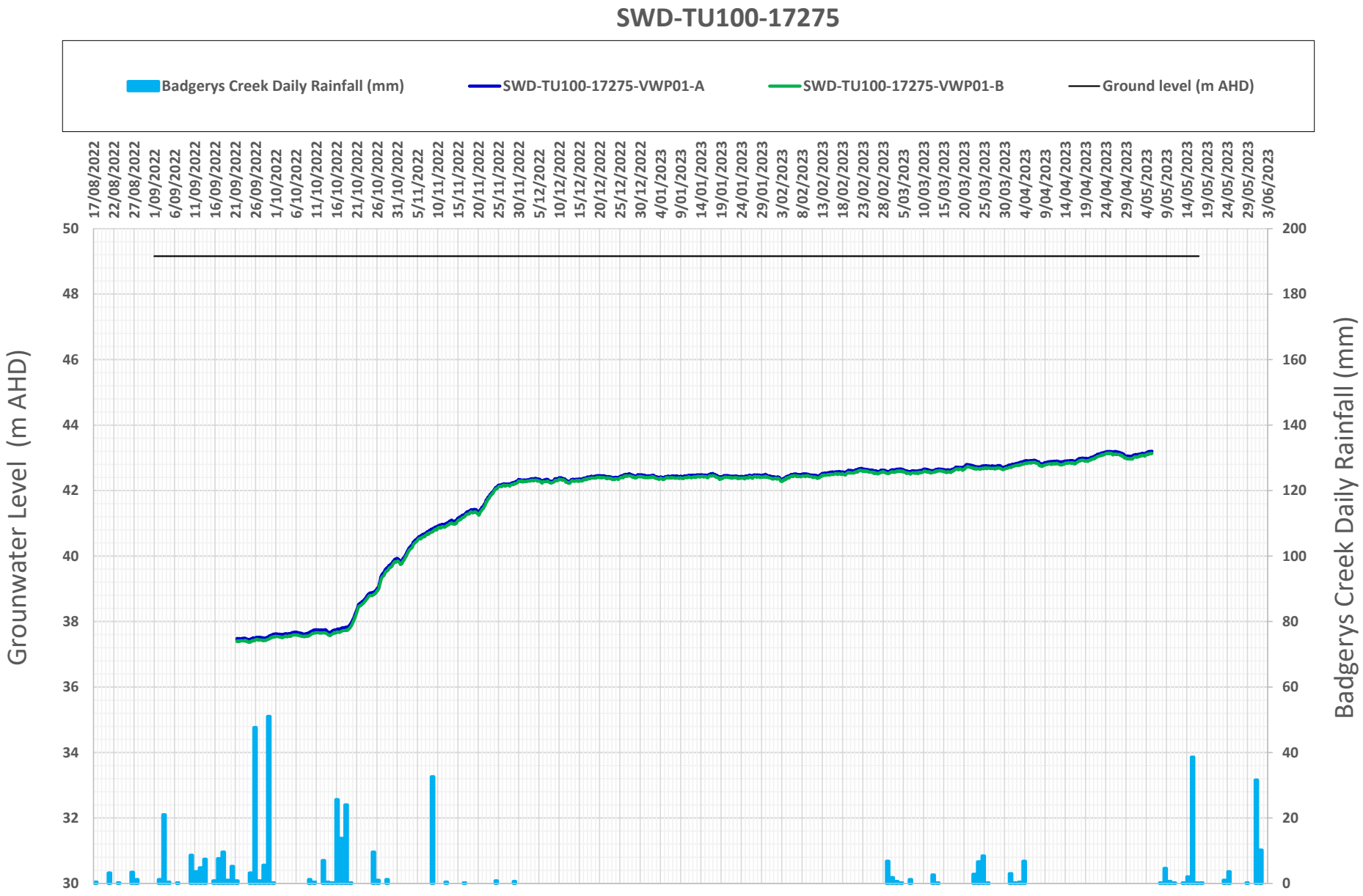
SWD-TU100-17275
Badgerys Creek Daily Rainfall (mm)
SWD-TU100-17275-VWP01-A
SWD-TU100-17275-VWP01-B
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
50
48
46
44
42
40
38
36
34
32
30
200
180
160
140
120
100
80
60
40
20
0
17/08/2022
22/08/2022
27/08/2022
1/09/2022
6/09/2022
11/09/2022
16/09/2022
21/09/2022
26/09/2022
1/10/2022
6/10/2022
11/10/2022
16/10/2022
21/10/2022
26/10/2022
31/10/2022
5/11/2022
10/11/2022
15/11/2022
20/11/2022
25/11/2022
30/11/2022
5/12/2022
10/12/2022
15/12/2022
20/12/2022
25/12/2022
30/12/2022
4/01/2023
9/01/2023
14/01/2023
19/01/2023
24/01/2023
29/01/2023
3/02/2023
8/02/2023
13/02/2023
18/02/2023
23/02/2023
28/02/2023
5/03/2023
10/03/2023
15/03/2023
20/03/2023
25/03/2023
30/03/2023
4/04/2023
9/04/2023
14/04/2023
19/04/2023
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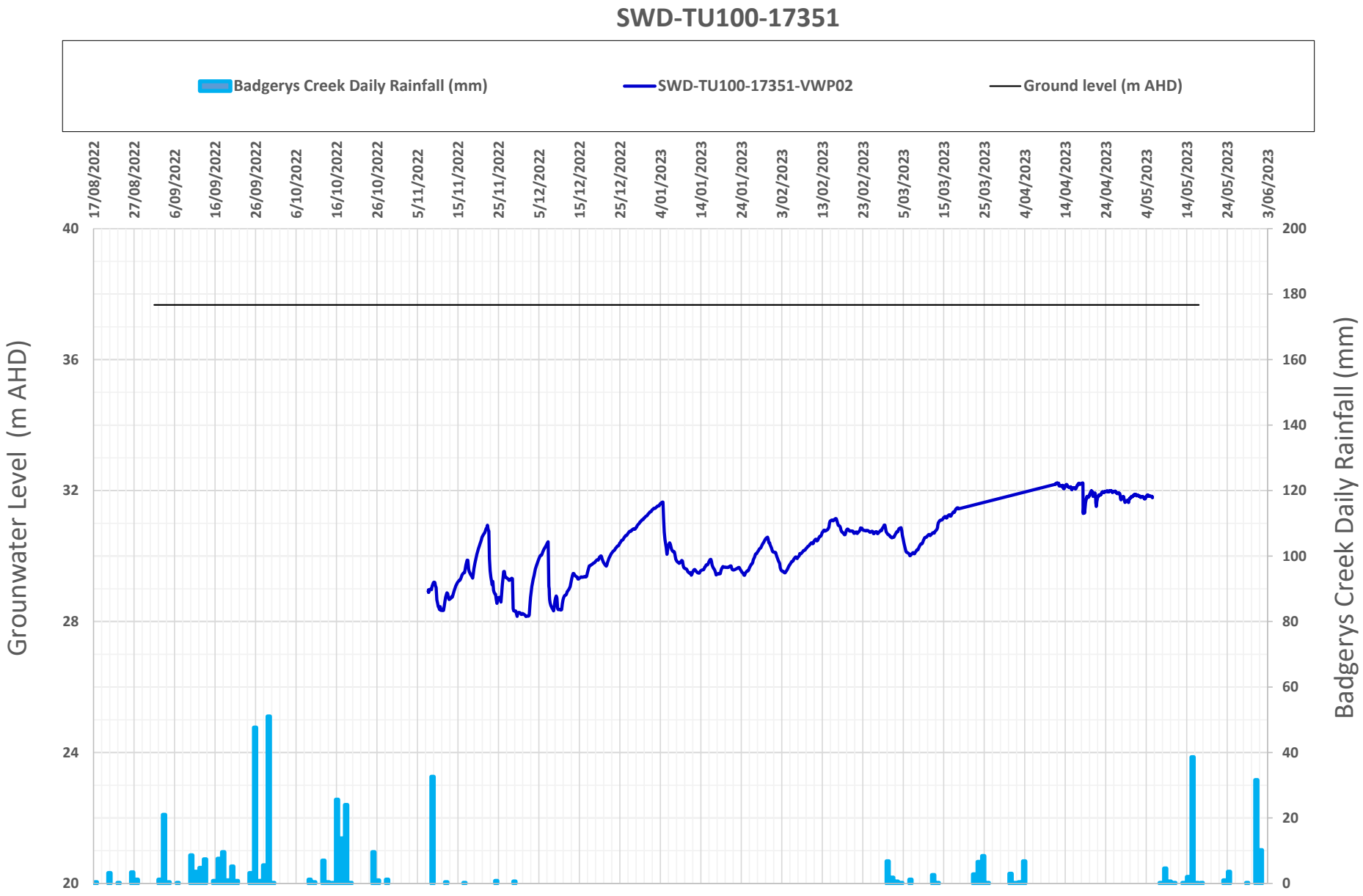
SWD-TU100-17351
Badgerys Creek Daily Rainfall (mm)
SWD-TU100-17351-VWP02
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
40
36
32
28
24
20
200
180
160
140
120
100
80
60
40
20
0
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
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14/04/2023
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14/05/2023
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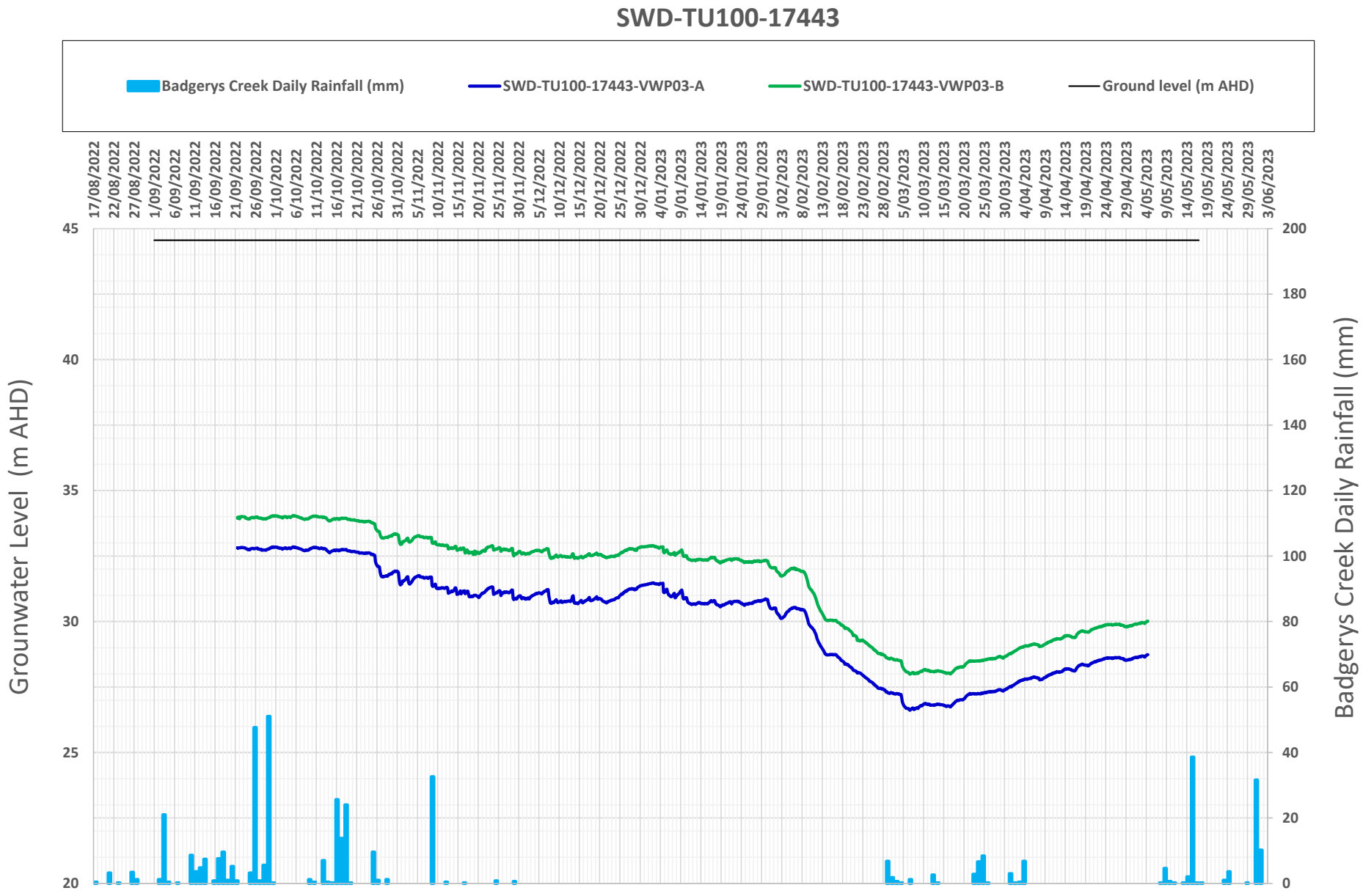
SWD-TU100-17443
Badgerys Creek Daily Rainfall (mm)
SWD-TU100-17443-VWP03-A
SWD-TU100-17443-VWP03-B
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
45
40
35
30
25
20
200
180
160
140
120
100
80
60
40
20
0
17/08/2022
22/08/2022
27/08/2022
1/09/2022
6/09/2022
11/09/2022
16/09/2022
21/09/2022
26/09/2022
1/10/2022
6/10/2022
11/10/2022
16/10/2022
21/10/2022
26/10/2022
31/10/2022
5/11/2022
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5/12/2022
10/12/2022
15/12/2022
20/12/2022
25/12/2022
30/12/2022
4/01/2023
9/01/2023
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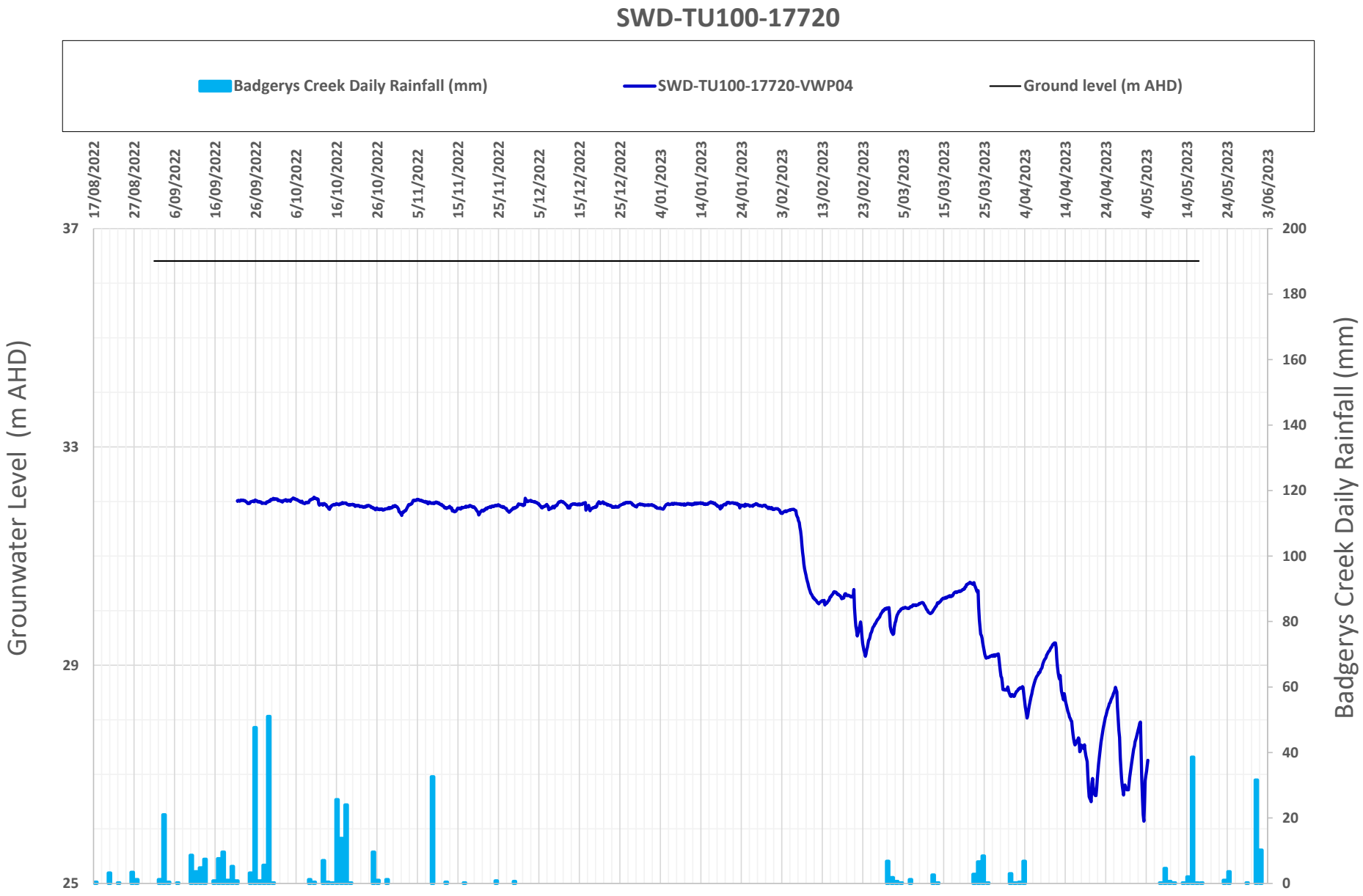
SWD-TU100-17720
Badgerys Creek Daily Rainfall (mm)
SWD-TU100-17720-VWP04
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
37
33
29
25
200
180
160
140
120
100
80
60
40
20
0
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
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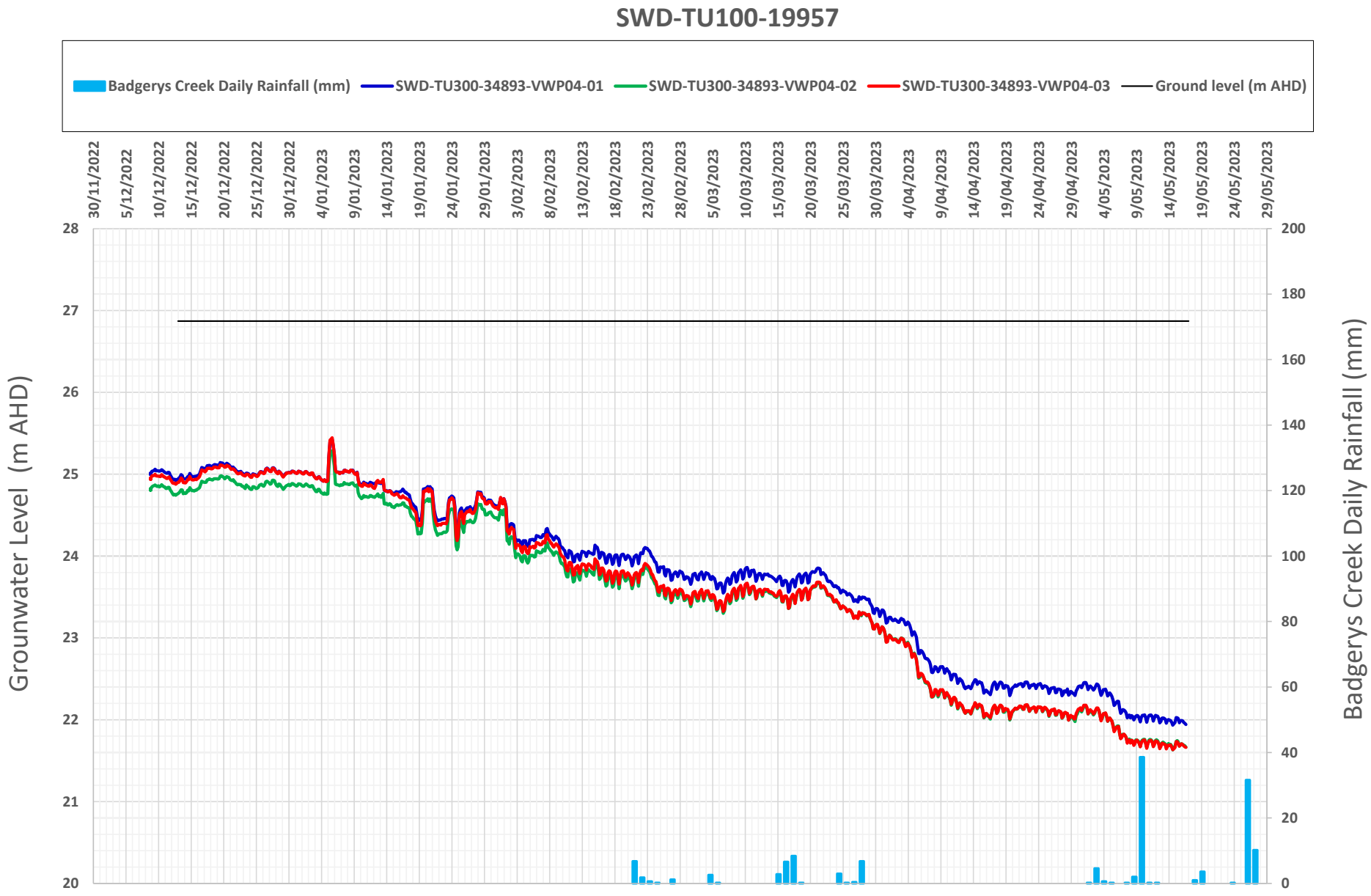
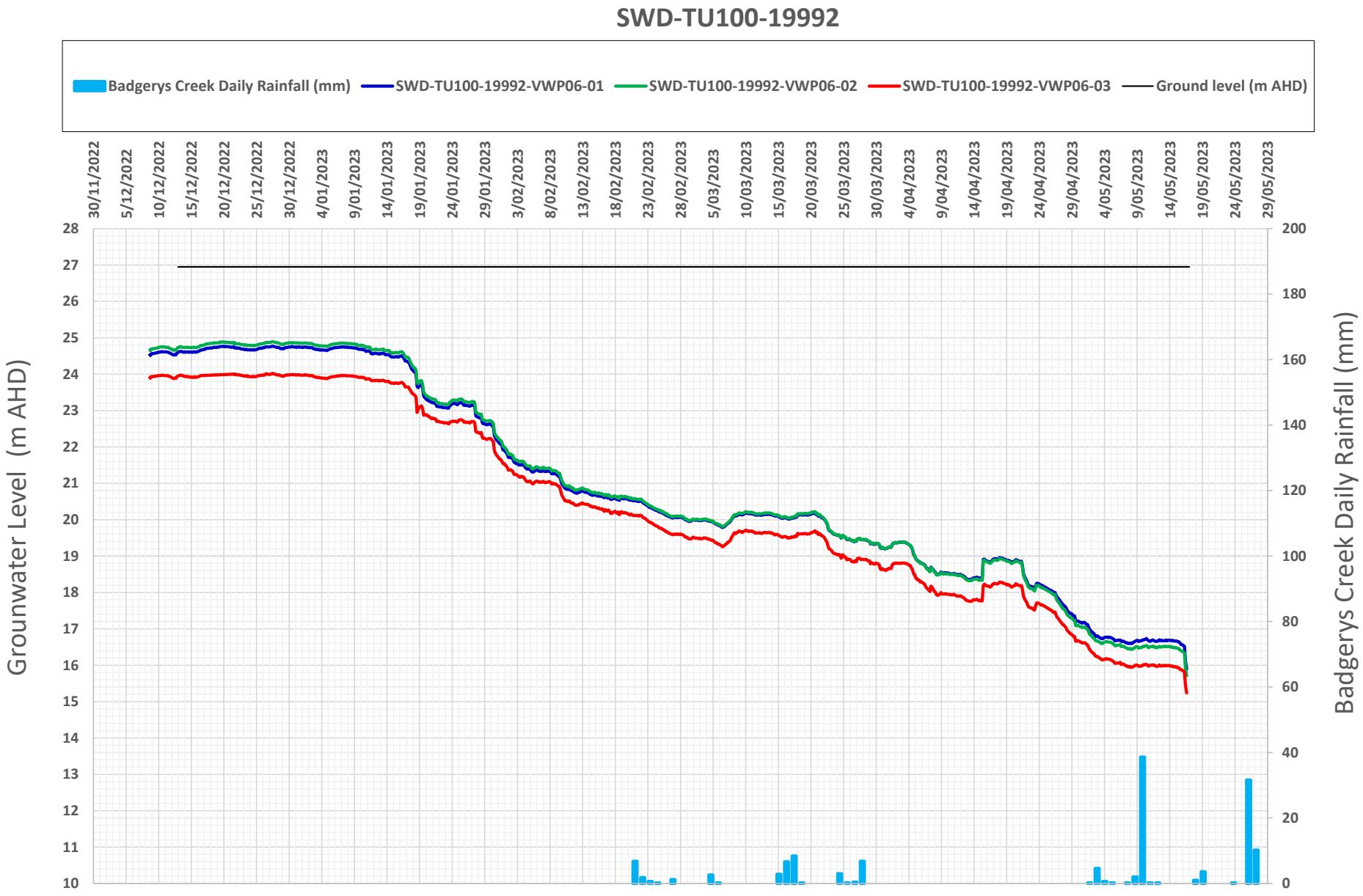
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023


SWD-TU100-19957
Badgerys Creek Daily Rainfall (mm)
SWD-TU300-34893-VWP04-01
SWD-TU300-34893-VWP04-02
SWD-TU300-34893-VWP04-03
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
28
27
26
25
24
23
22
21
20
200
180
160
140
120
100
80
60
40
20
0
30/11/2022
5/12/2022
10/12/2022
15/12/2022
20/12/2022
25/12/2022
30/12/2022
4/01/2023
9/01/2023
14/01/2023
19/01/2023
24/01/2023
29/01/2023
3/02/2023
8/02/2023
13/02/2023
18/02/2023
23/02/2023
28/02/2023
5/03/2023
10/03/2023
15/03/2023
20/03/2023
25/03/2023
30/03/2023
4/04/2023
9/04/2023
14/04/2023
19/04/2023
24/04/2023
29/04/2023
4/05/2023
9/05/2023
14/05/2023
19/05/2023
24/05/2023
29/05/2023


SWD-TU100-19992
Badgerys Creek Daily Rainfall (mm)
SWD-TU100-19992-VWP06-01
SWD-TU100-19992-VWP06-02
SWD-TU100-19992-VWP06-03
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
30/11/2022
5/12/2022
10/12/2022
15/12/2022
20/12/2022
25/12/2022
30/12/2022
4/01/2023
9/01/2023
14/01/2023
19/01/2023
24/01/2023
29/01/2023
3/02/2023
8/02/2023
13/02/2023
18/02/2023
23/02/2023
28/02/2023
5/03/2023
10/03/2023
15/03/2023
20/03/2023
25/03/2023
30/03/2023
4/04/2023
9/04/2023
14/04/2023
19/04/2023
24/04/2023
29/04/2023
4/05/2023
9/05/2023
14/05/2023
19/05/2023
24/05/2023
29/05/2023
28
27
26
25
24
23
22
21
20
19
18
17
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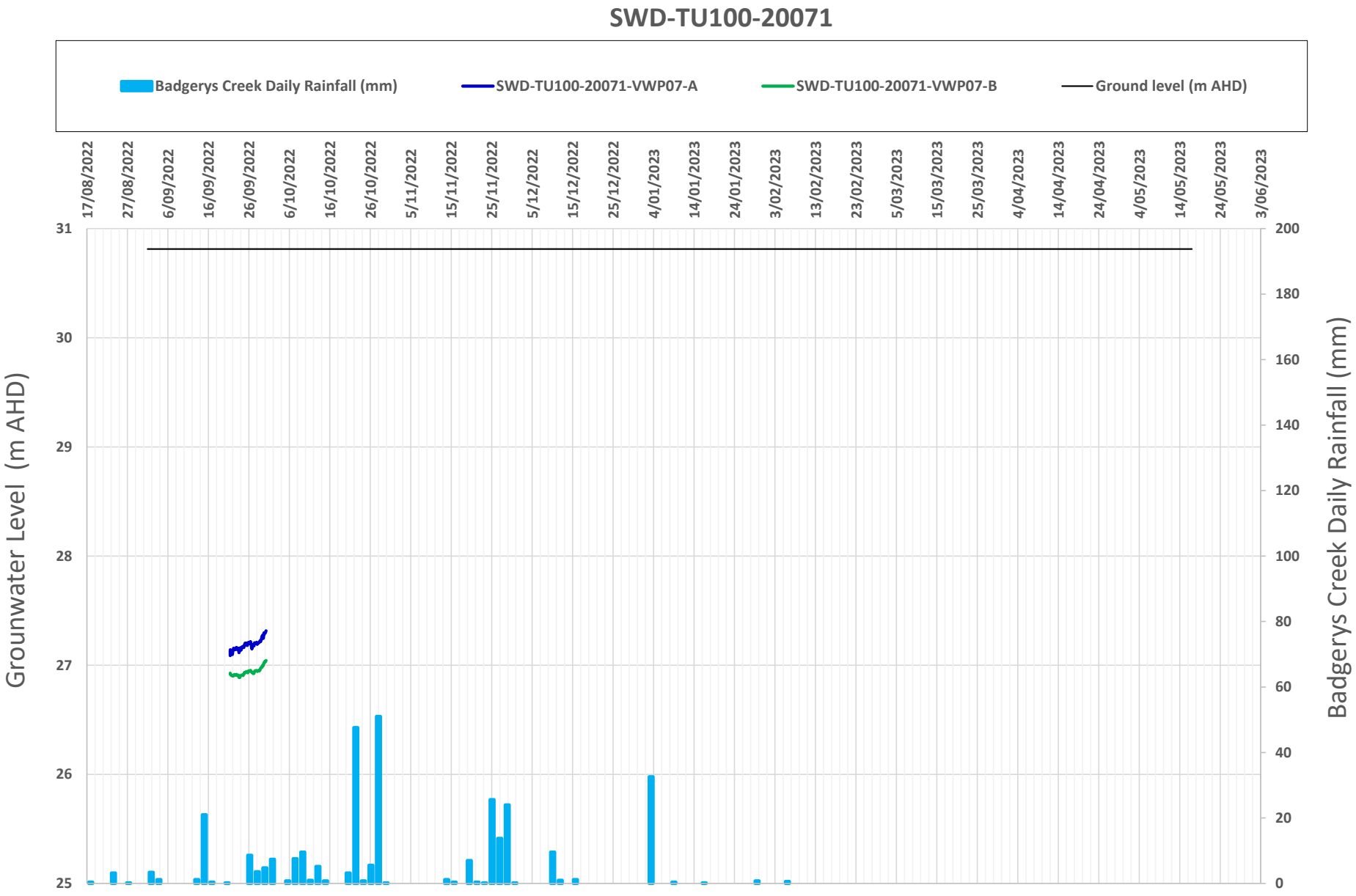
14
13
12
11
10
200
180
160
140
120
100
80
60
40
20
0


SWD-TU100-20071
Badgerys Creek Daily Rainfall (mm)
SWD-TU100-20071-VWP07-A
SWD-TU100-20071-VWP07-B
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
31
30
29
28
27
26
25
200
180
160
140
120
100
80
60
40
20
0
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
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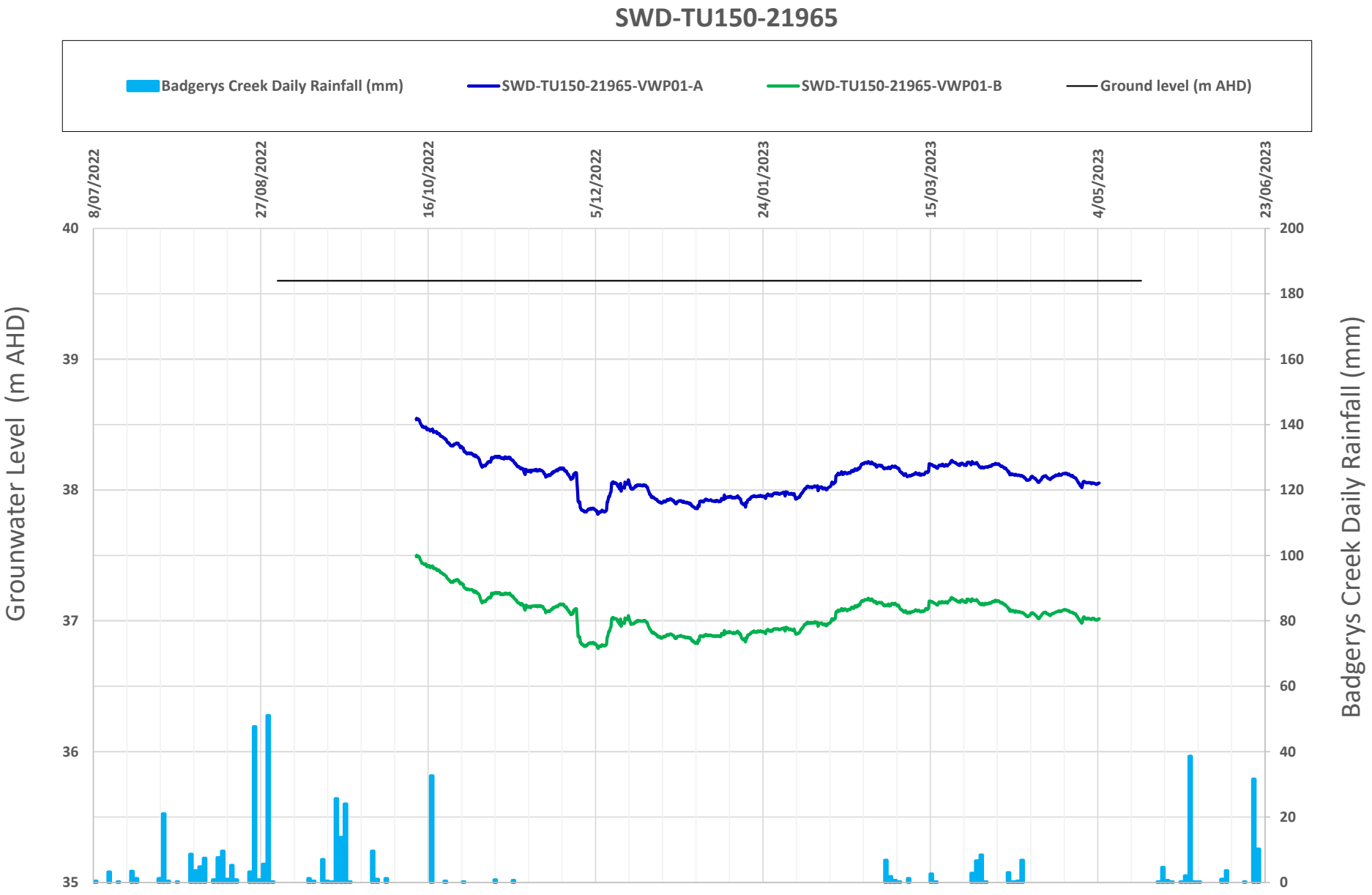
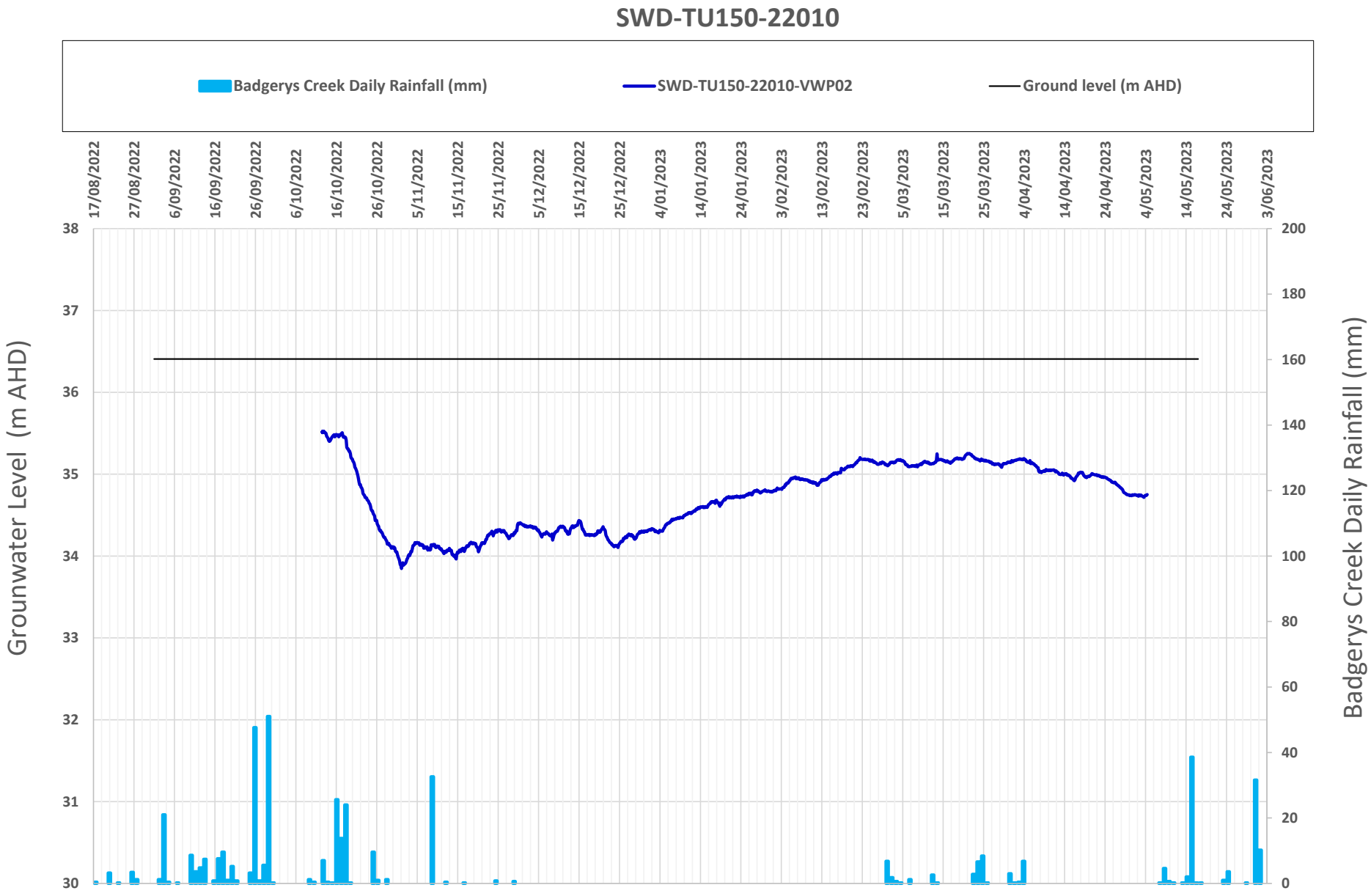
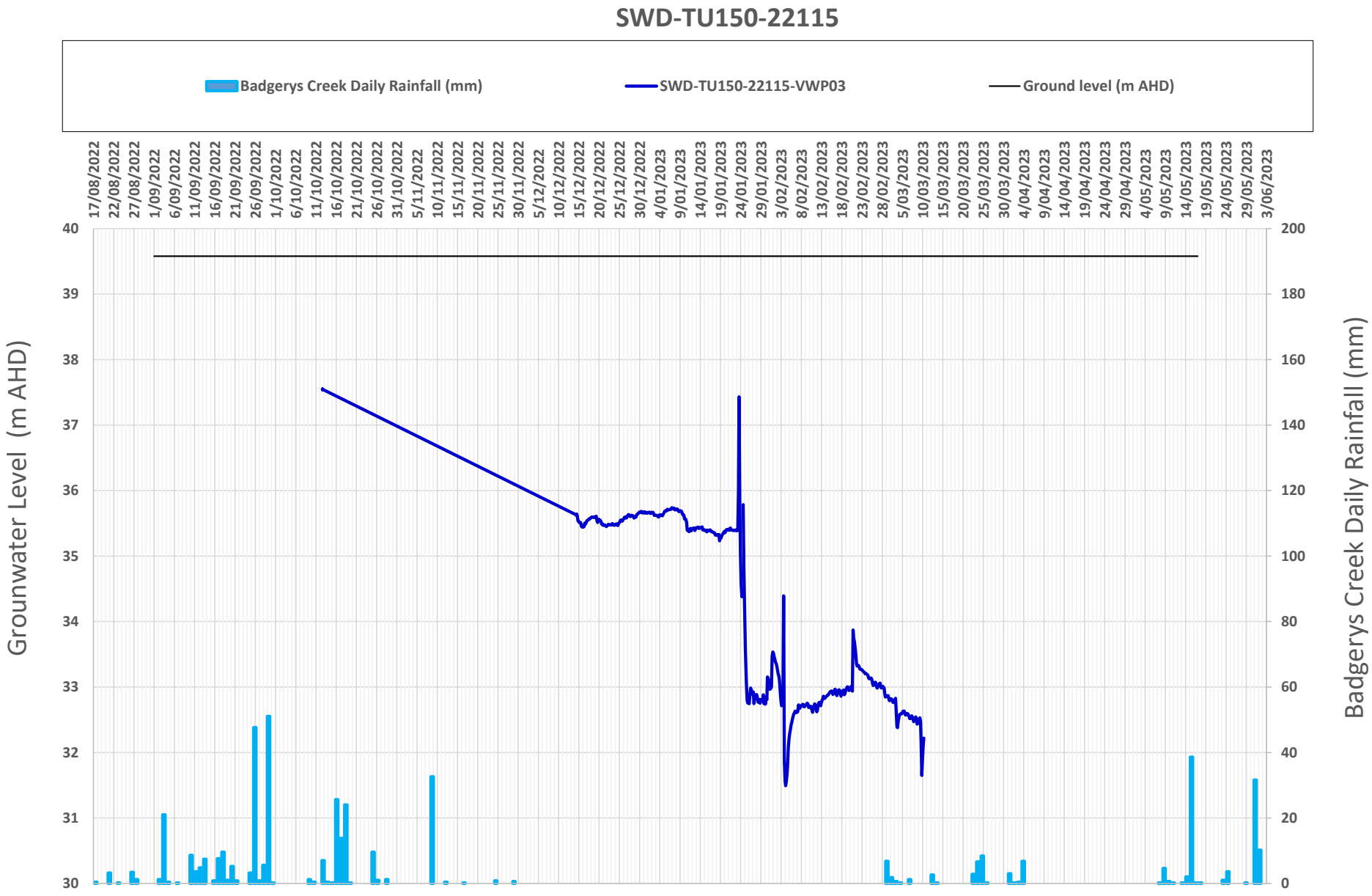
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023


SWD-TU150-21965
Badgerys Creek Daily Rainfall (mm)
SWD-TU150-21965-VWP01-A
SWD-TU150-21965-VWP01-B
Ground level (m AHD)
8/07/2022
27/08/2022
16/10/2022
5/12/2022
24/01/2023
15/03/2023
4/05/2023
23/06/2023
Grounwater Level (m AHD)
40
39
38
37
36
35
Badgerys Creek Daily Rainfall (mm)
200
180
160
140
120
100
80
60
40
20
0


SWD-TU150-22010
Badgerys Creek Daily Rainfall (mm)
SWD-TU150-22010-VWP02
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
38
37
36
35
34
33
32
31
30
200
180
160
140
120
100
80
60
40
20
0
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023


SWD-TU150-22115
Badgerys Creek Daily Rainfall (mm)
SWD-TU150-22115-VWP03
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
40
39
38
37
36
35
34
33
32
31
30
200
180
160
140
120
100
80
60
40
20
0
17/08/2022
22/08/2022
27/08/2022
1/09/2022
6/09/2022
11/09/2022
16/09/2022
21/09/2022
26/09/2022
1/10/2022
6/10/2022
11/10/2022
16/10/2022
21/10/2022
26/10/2022
31/10/2022
5/11/2022
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15/11/2022
20/11/2022
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5/12/2022
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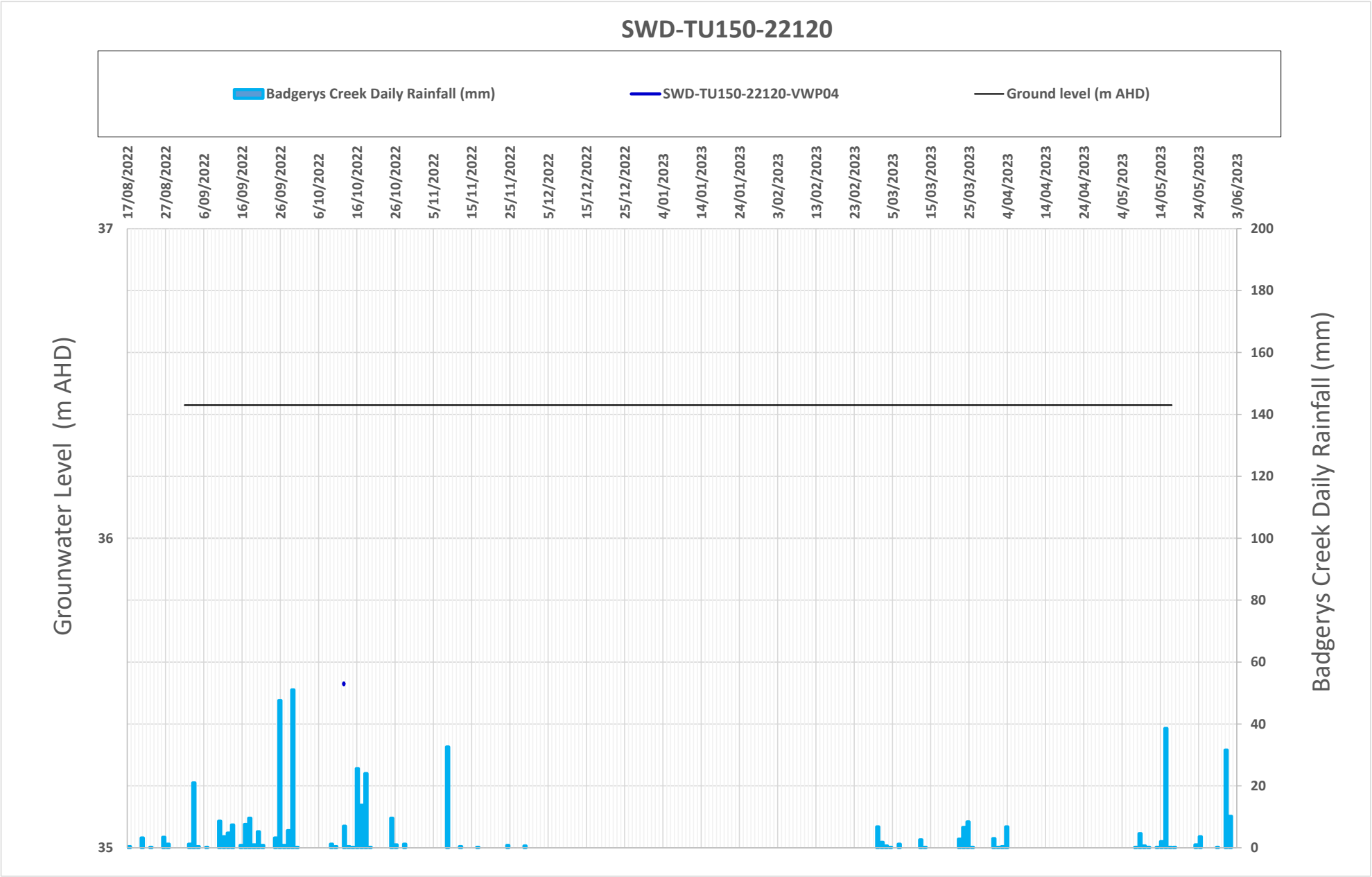
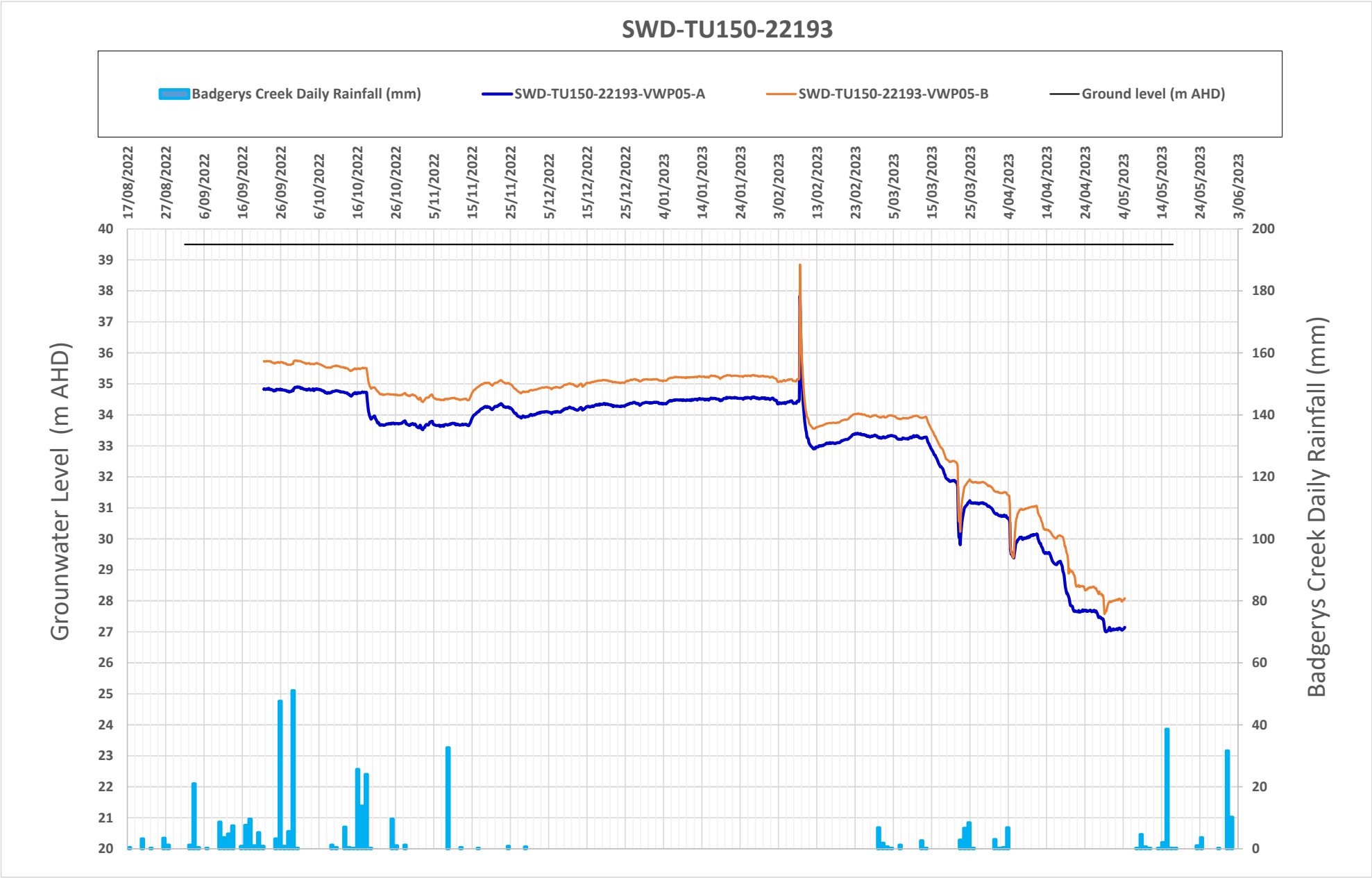
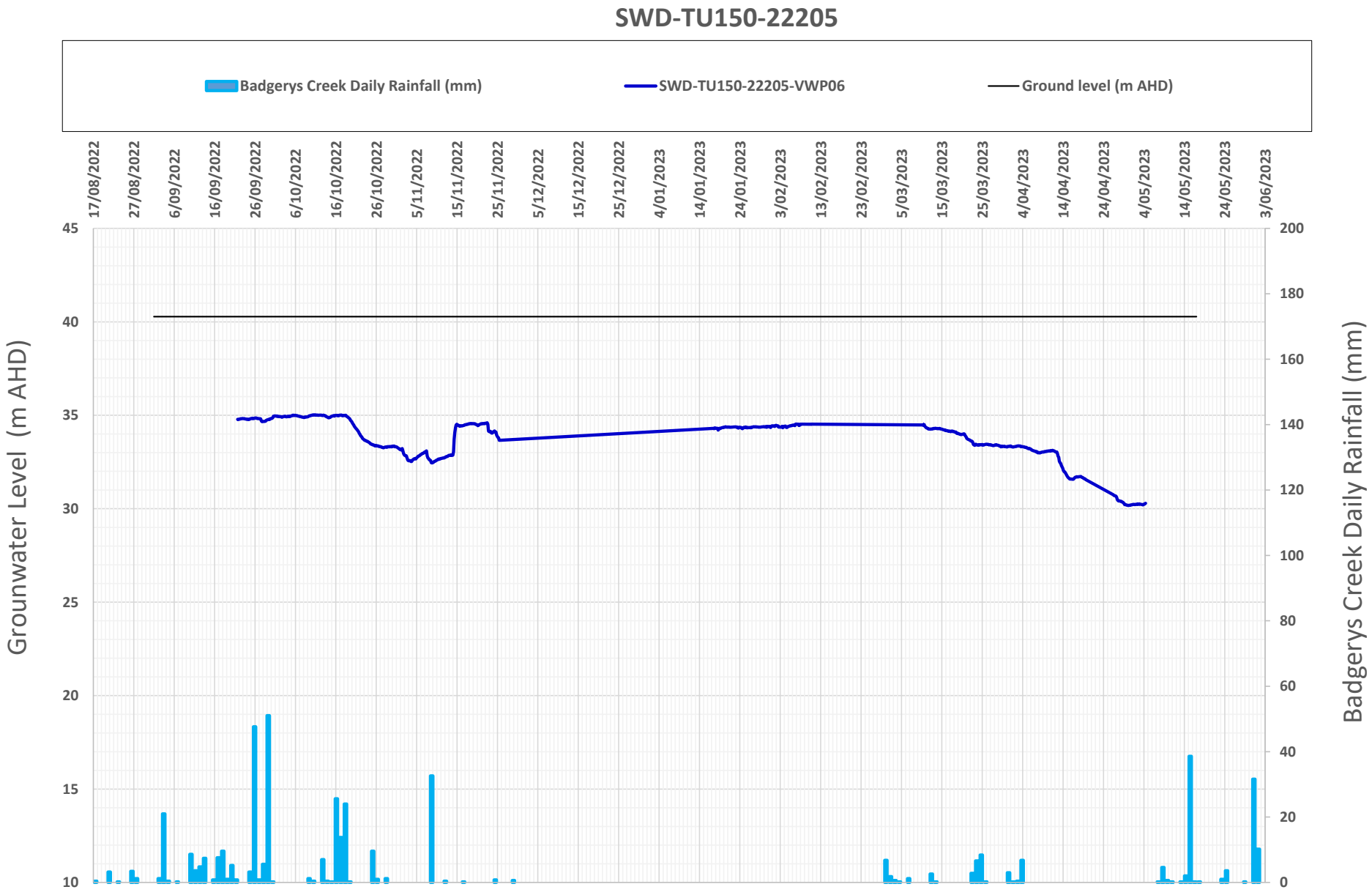
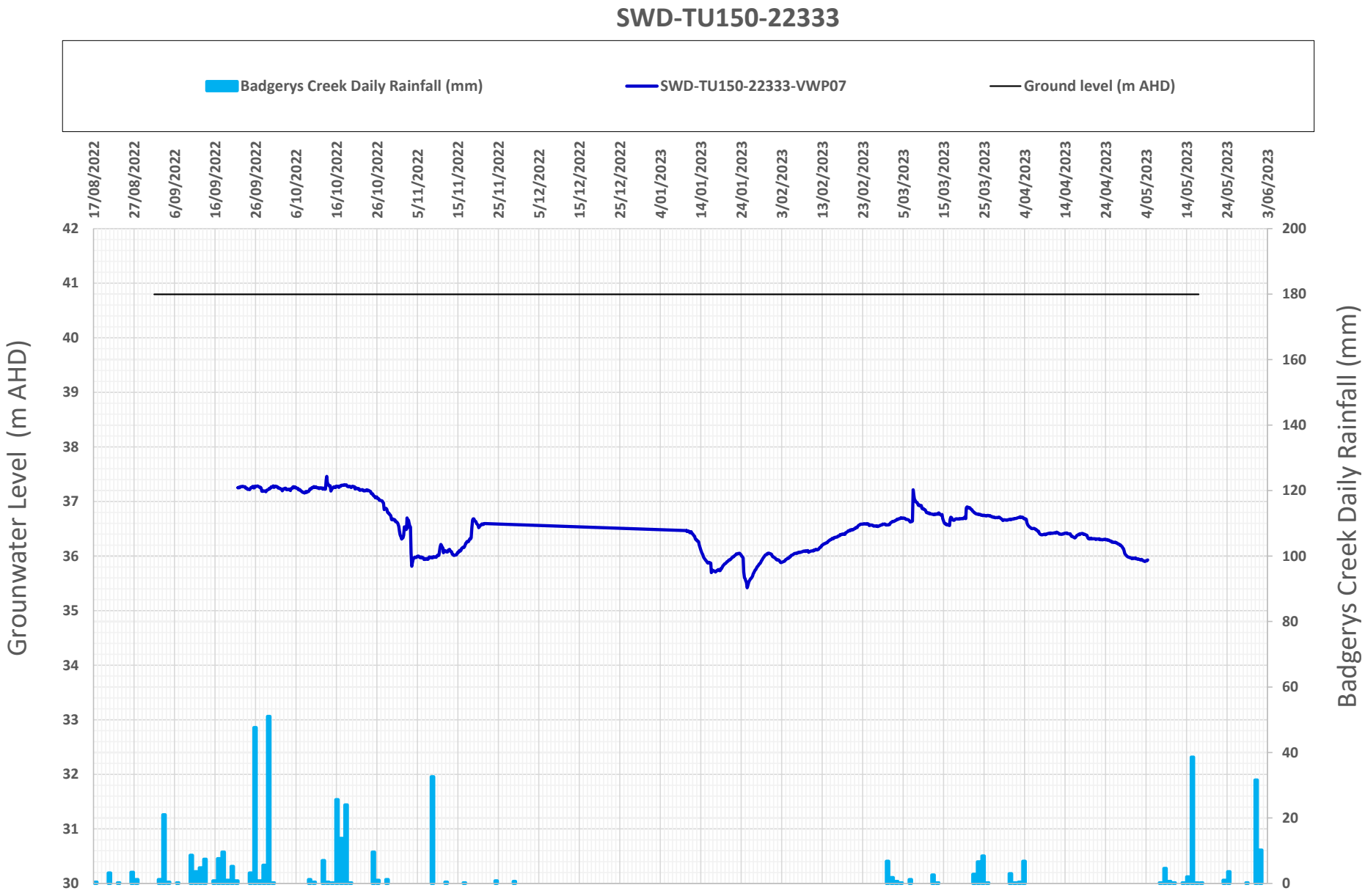
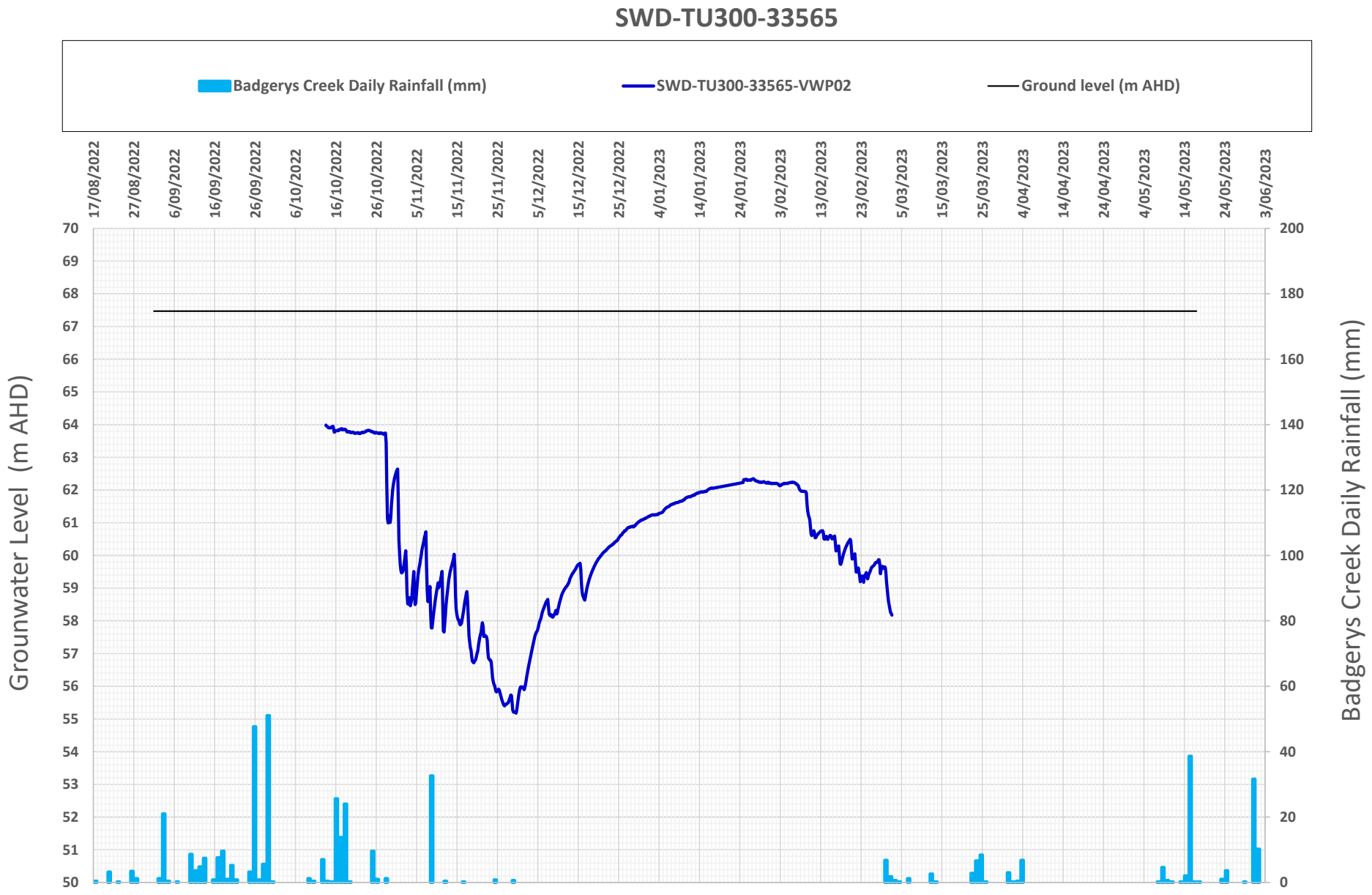
15/12/2022
20/12/2022
25/12/2022
30/12/2022
4/01/2023
9/01/2023
14/01/2023
19/01/2023
24/01/2023
29/01/2023
3/02/2023
8/02/2023
13/02/2023
18/02/2023
23/02/2023
28/02/2023
5/03/2023
10/03/2023
15/03/2023
20/03/2023
25/03/2023
30/03/2023
4/04/2023
9/04/2023
14/04/2023
19/04/2023
24/04/2023
29/04/2023
4/05/2023
9/05/2023
14/05/2023
19/05/2023
24/05/2023
29/05/2023
3/06/2023

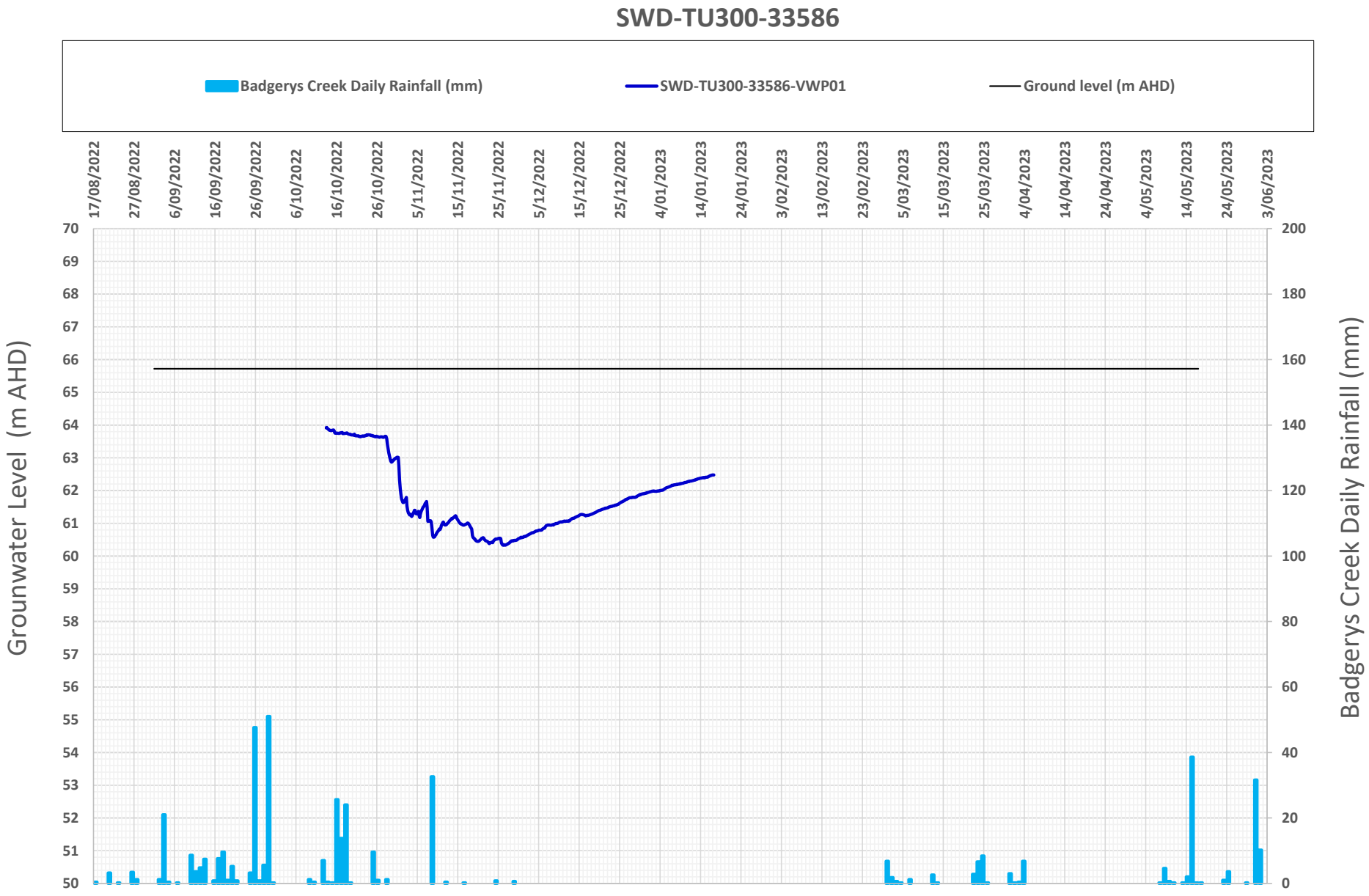

SWD-TU150-22120
Badgerys Creek Daily Rainfall (mm)
SWD-TU150-22120-VWP04
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
37
36
35
200
180
160
140
120
100
80
60
40
20
0
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023

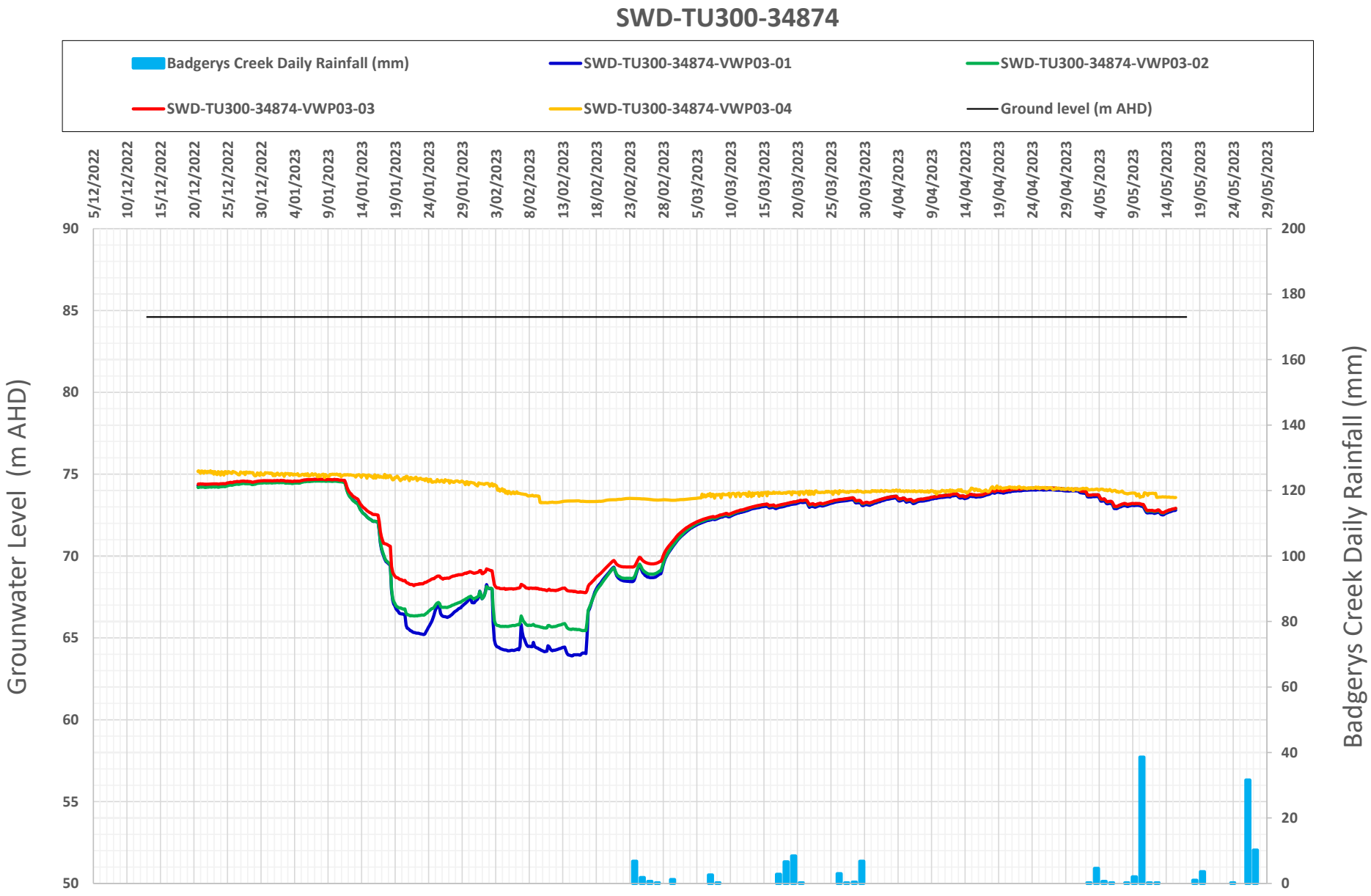

SWD-TU150-22193
Badgerys Creek Daily Rainfall (mm)
SWD-TU150-22193-VWP05-A
SWD-TU150-22193-VWP05-B
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
40
39
38
37
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
200
180
160
140
120
100
80
60
40
20
0

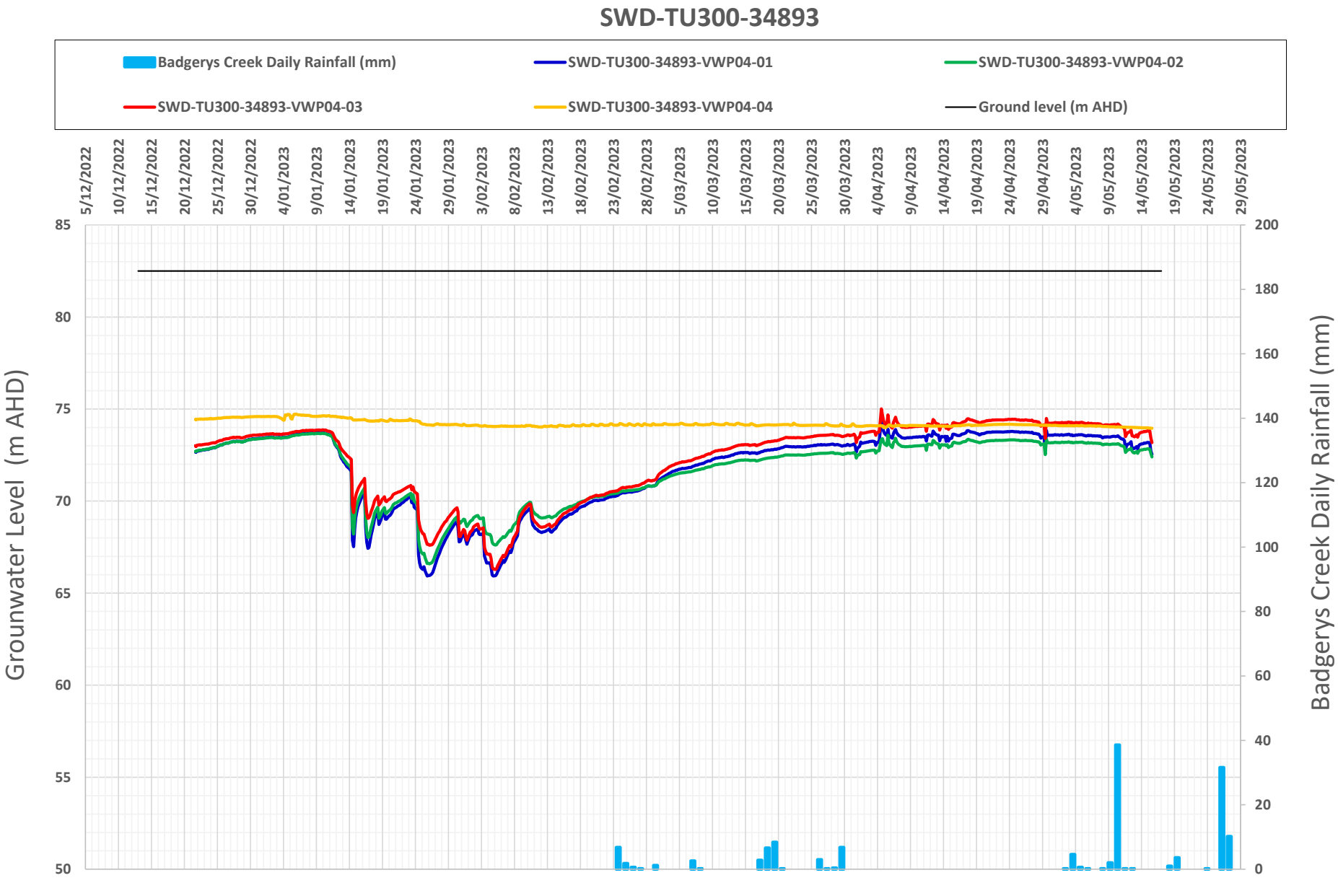

SWD-TU150-22205
Badgerys Creek Daily Rainfall (mm)
SWD-TU150-22205-VWP06
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
45
40
35
30
25
20
15
10
200
180
160
140
120
100
80
60
40
20
0
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023


SWD-TU150-22333
Badgerys Creek Daily Rainfall (mm)
SWD-TU150-22333-VWP07
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
42
41
40
39
38
37
36
35
34
33
32
31
30
200
180
160
140
120
100
80
60
40
20
0


SWD-TU300-33565
Badgerys Creek Daily Rainfall (mm)
SWD-TU300-33565-VWP02
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
70
69
68
67
66
65
64
63
62
61
60
59
58
57
56
55
54
53
52
51
50
200
180
160
140
120
100
80
60
40
20
0


SWD-TU300-33586
Badgerys Creek Daily Rainfall (mm)
SWD-TU300-33586-VWP01
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
70
69
68
67
66
65
64
63
62
61
60
59
58
57
56
55
54
53
52
51
50
200
180
160
140
120
100
80
60
40
20
0


SWD-TU300-34874
Badgerys Creek Daily Rainfall (mm)
SWD-TU300-34874-VWP03-01
SWD-TU300-34874-VWP03-02
SWD-TU300-34874-VWP03-03
SWD-TU300-34874-VWP03-04
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
5/12/2022
10/12/2022
15/12/2022
20/12/2022
25/12/2022
30/12/2022
4/01/2023
9/01/2023
14/01/2023
19/01/2023
24/01/2023
29/01/2023
3/02/2023
8/02/2023
13/02/2023
18/02/2023
23/02/2023
28/02/2023
5/03/2023
10/03/2023
15/03/2023
20/03/2023
25/03/2023
30/03/2023
4/04/2023
9/04/2023
14/04/2023
19/04/2023
24/04/2023
29/04/2023
4/05/2023
9/05/2023
14/05/2023
19/05/2023
24/05/2023
29/05/2023
90
85
80
75
70
65
60
55
50
200
180
160
140
120
100
80
60
40
20
0


SWD-TU300-34893
Badgerys Creek Daily Rainfall (mm)
SWD-TU300-34893-VWP04-01
SWD-TU300-34893-VWP04-02
SWD-TU300-34893-VWP04-03
SWD-TU300-34893-VWP04-04
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
85
80
75
70
65
60
55
50
200
180
160
140
120
100
80
60
40
20
0
5/12/2022
10/12/2022
15/12/2022
20/12/2022
25/12/2022
30/12/2022
4/01/2023
9/01/2023
14/01/2023
19/01/2023
24/01/2023
29/01/2023
3/02/2023
8/02/2023
13/02/2023
18/02/2023
23/02/2023
28/02/2023
5/03/2023
10/03/2023
15/03/2023
20/03/2023
25/03/2023
30/03/2023
4/04/2023
9/04/2023
14/04/2023
19/04/2023
24/04/2023
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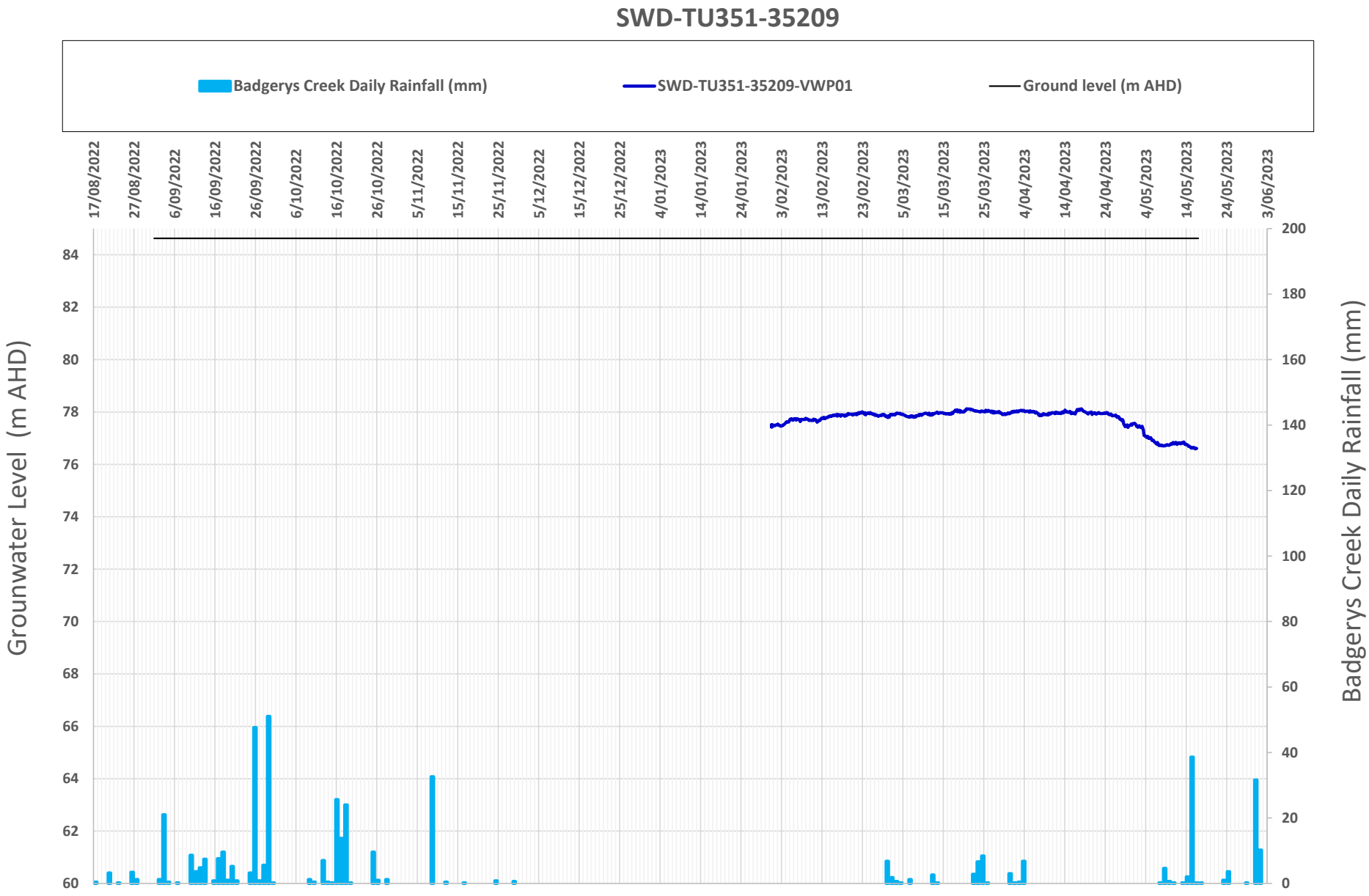
14/05/2023
19/05/2023
24/05/2023
29/05/2023


SWD-TU351-35209
Badgerys Creek Daily Rainfall (mm)
SWD-TU351-35209-VWP01
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
84
82
80
78
76
74
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68
66
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62
60
200
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160
140
120
100
80
60
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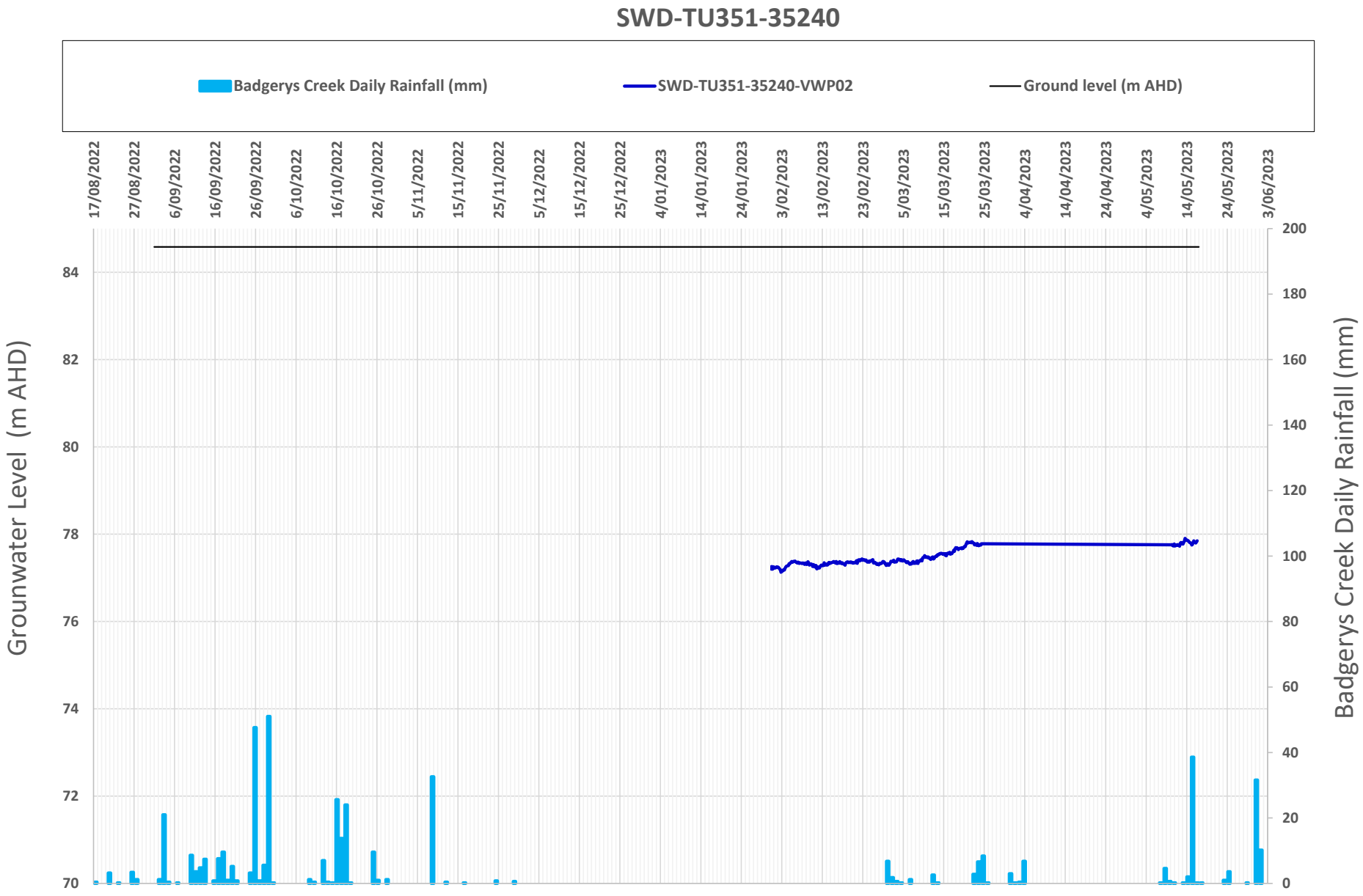
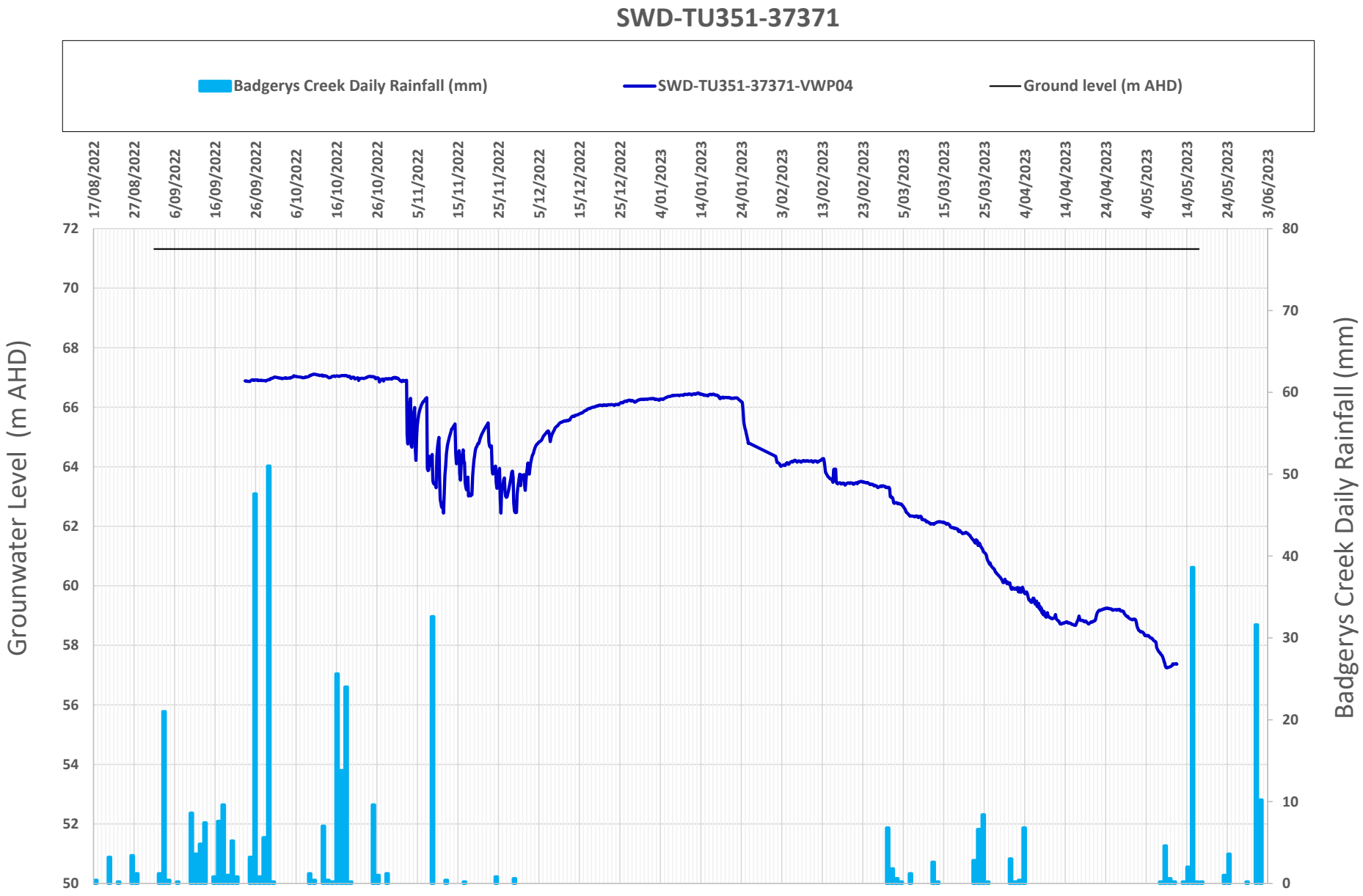

SWD-TU351-35240
Badgerys Creek Daily Rainfall (mm)
SWD-TU351-35240-VWP02
Ground level (m AHD)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
Grounwater Level (m AHD)
84
82
80
78
76
74
72
70
Badgerys Creek Daily Rainfall (mm)
200
180
160
140
120
100
80
60
40
20
0


SWD-TU351-37371
Badgerys Creek Daily Rainfall (mm)
SWD-TU351-37371-VWP04
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
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5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
72
70
68
66
64
62
60
58
56
54
52
50
80
70
60
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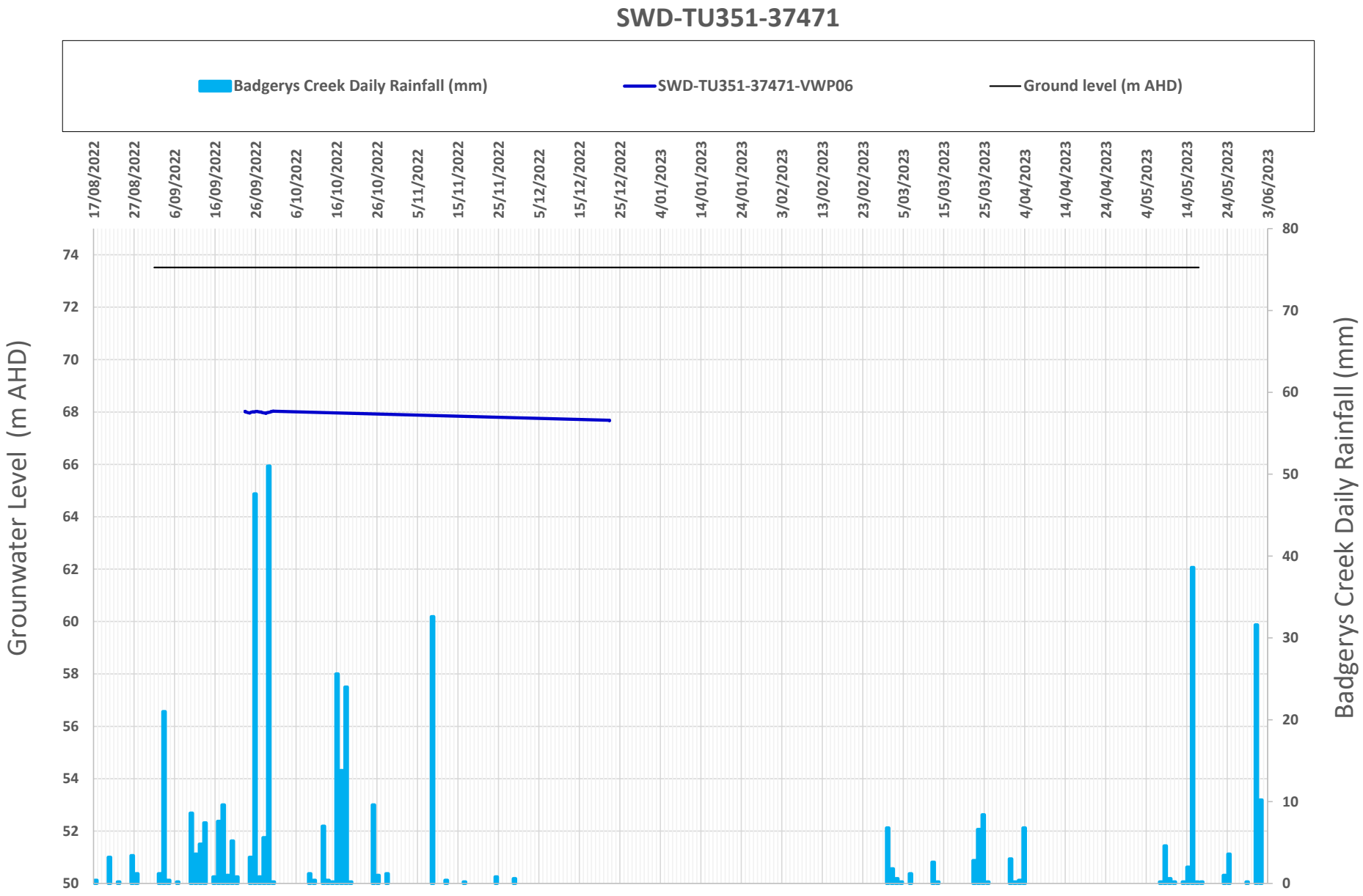
10
0


SWD-TU351-37471
Badgerys Creek Daily Rainfall (mm)
SWD-TU351-37471-VWP06
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
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23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
74
72
70
68
66
64
62
60
58
56
54
52
50
80
70
60
50
40
30
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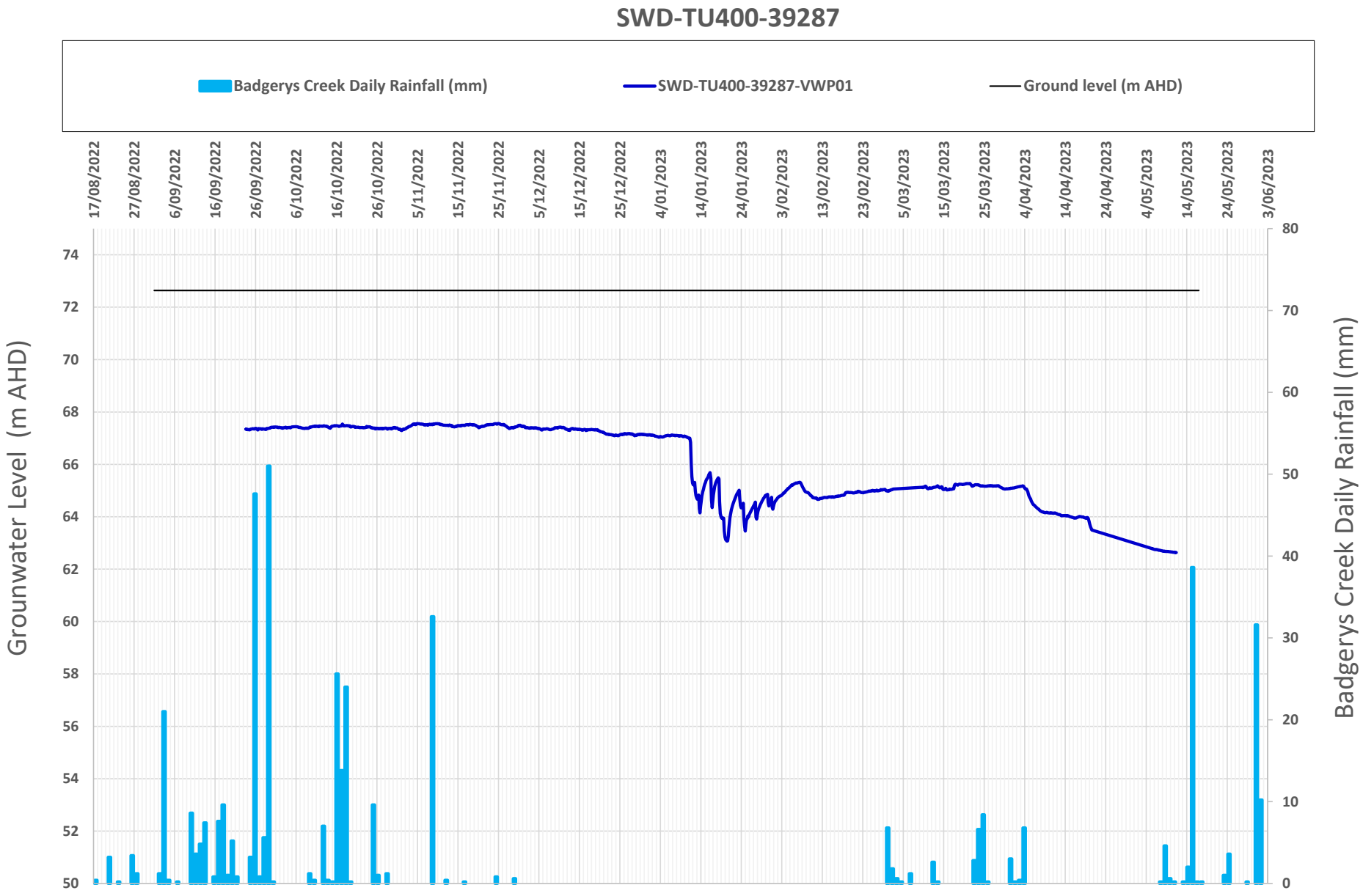
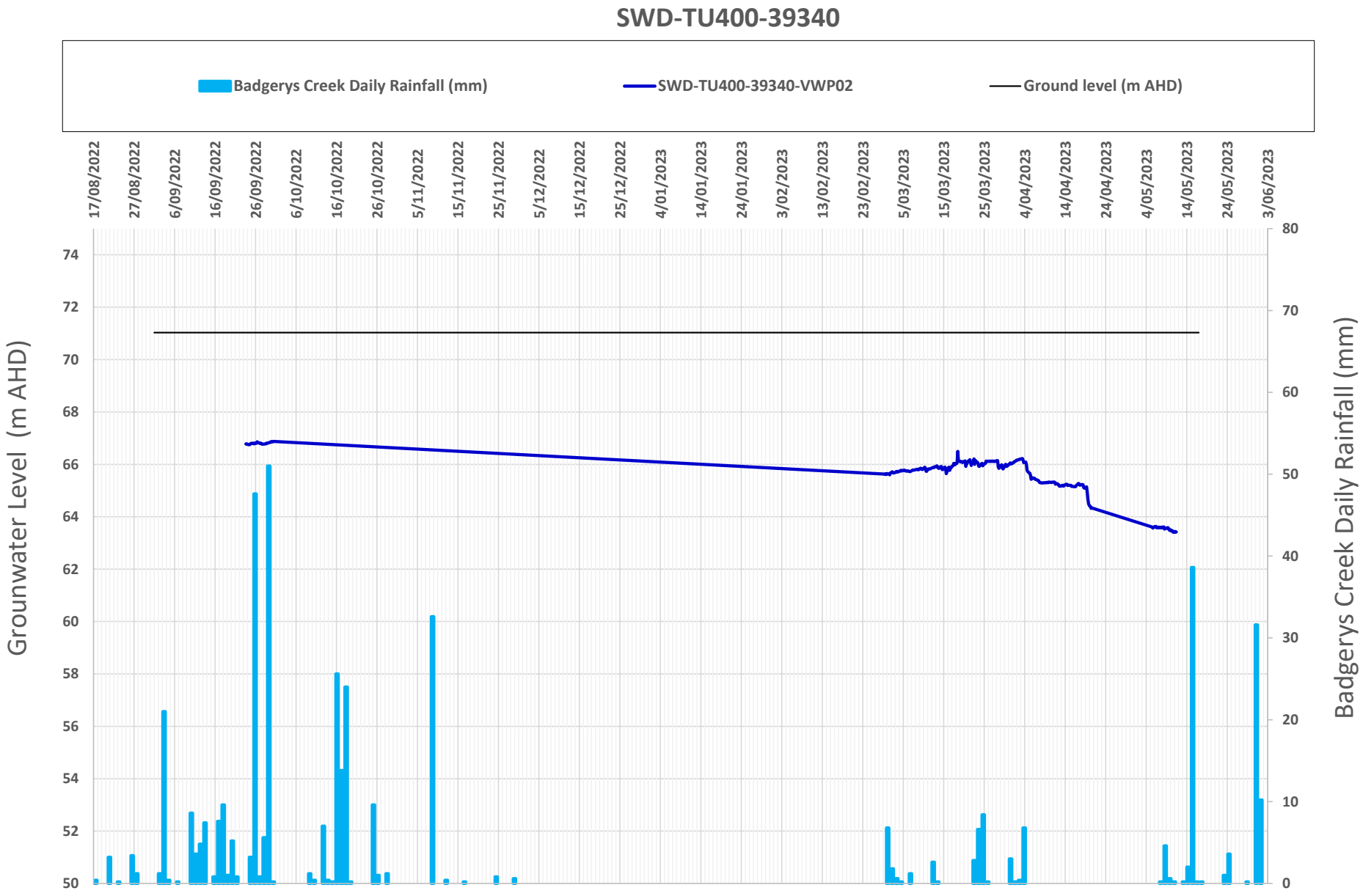
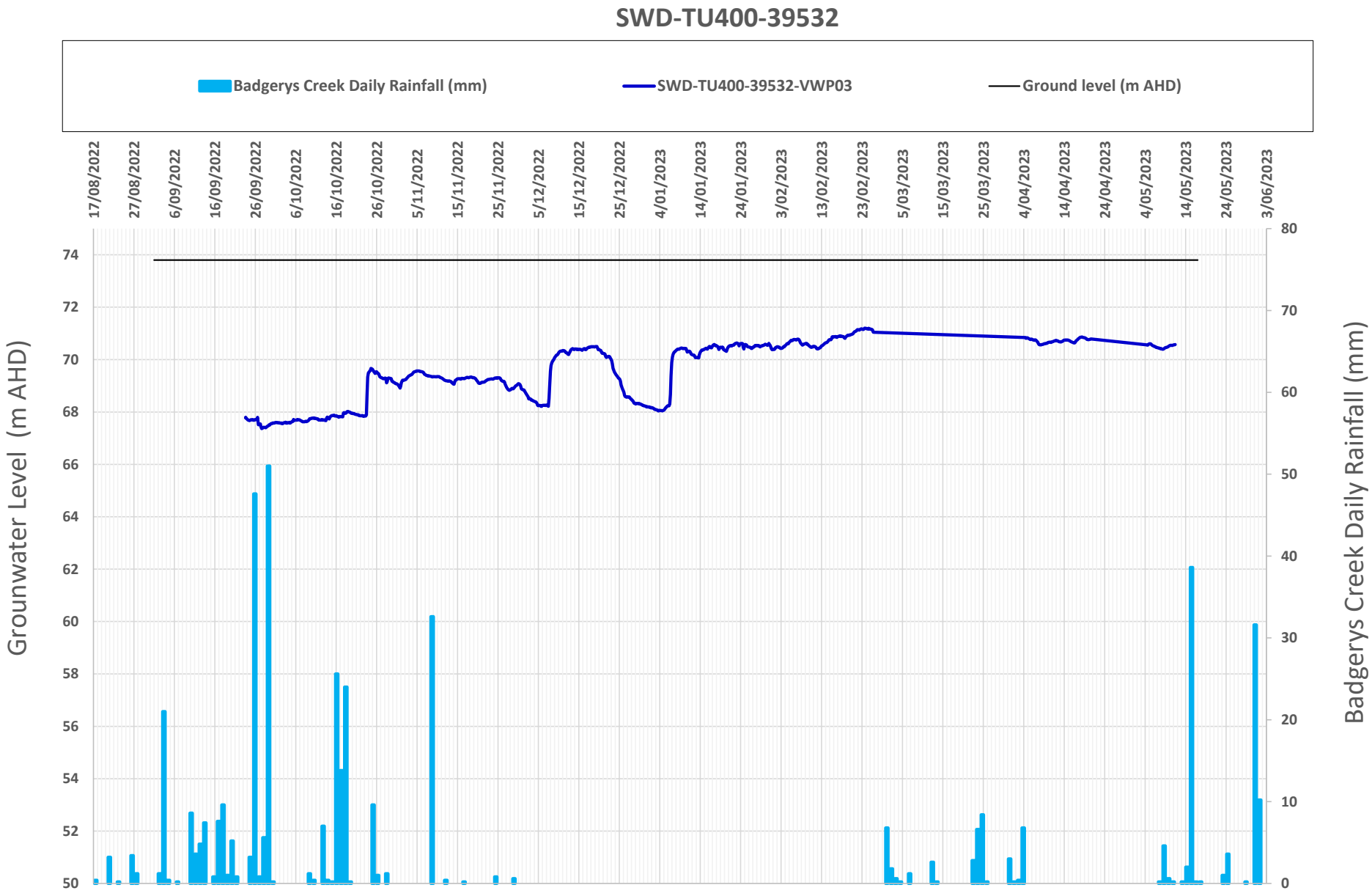
10
0


SWD-TU400-39287
Badgerys Creek Daily Rainfall (mm)
SWD-TU400-39287-VWP01
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
74
72
70
68
66
64
62
60
58
56
54
52
50
80
70
60
50
40
30
20
10
0


SWD-TU400-39340
Badgerys Creek Daily Rainfall (mm)
SWD-TU400-39340-VWP02
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
74
72
70
68
66
64
62
60
58
56
54
52
50
80
70
60
50
40
30
20
10
0


SWD-TU400-39532
Badgerys Creek Daily Rainfall (mm)
SWD-TU400-39532-VWP03
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
74
72
70
68
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64
62
60
58
56
54
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70
60
50
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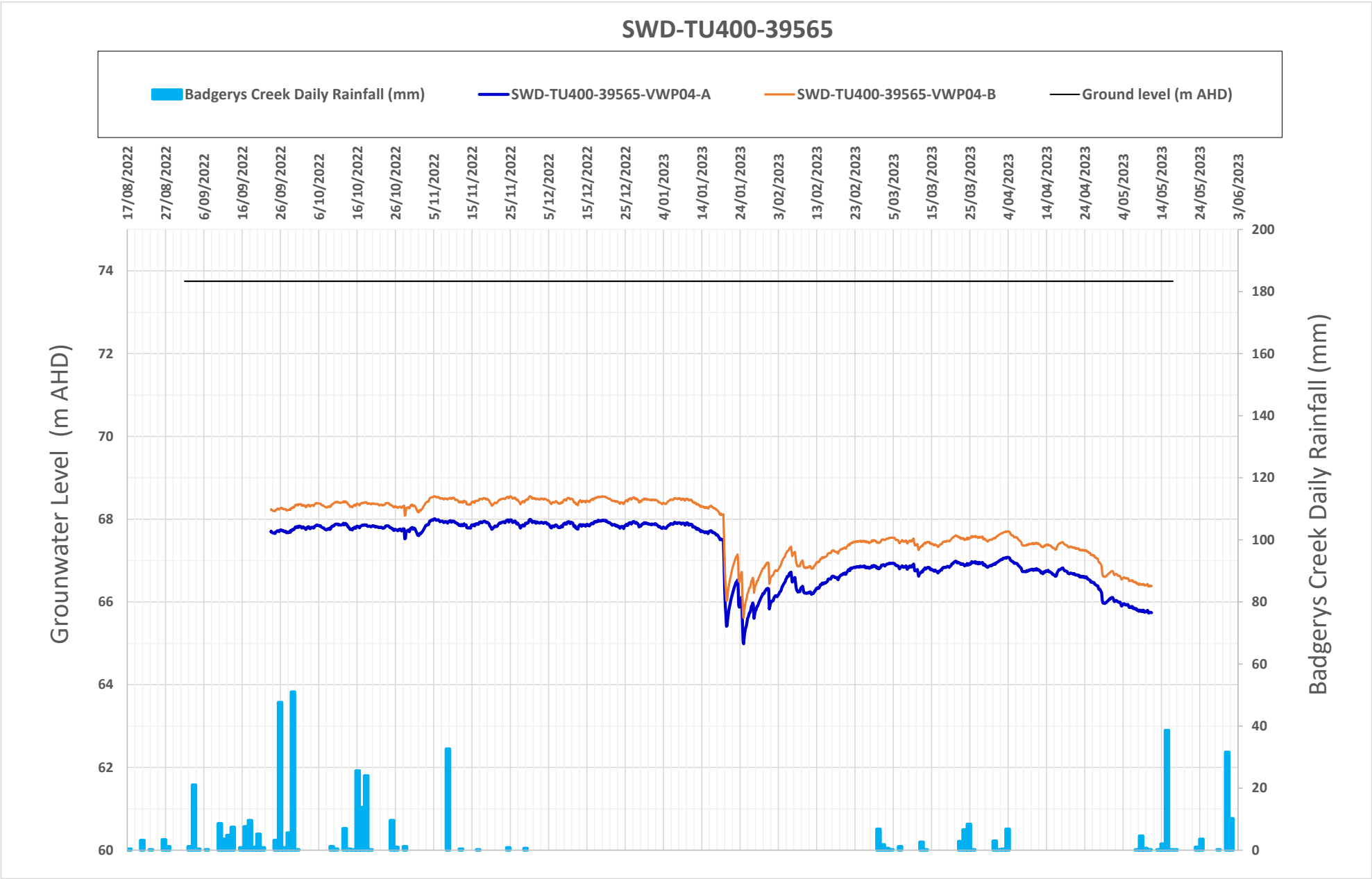
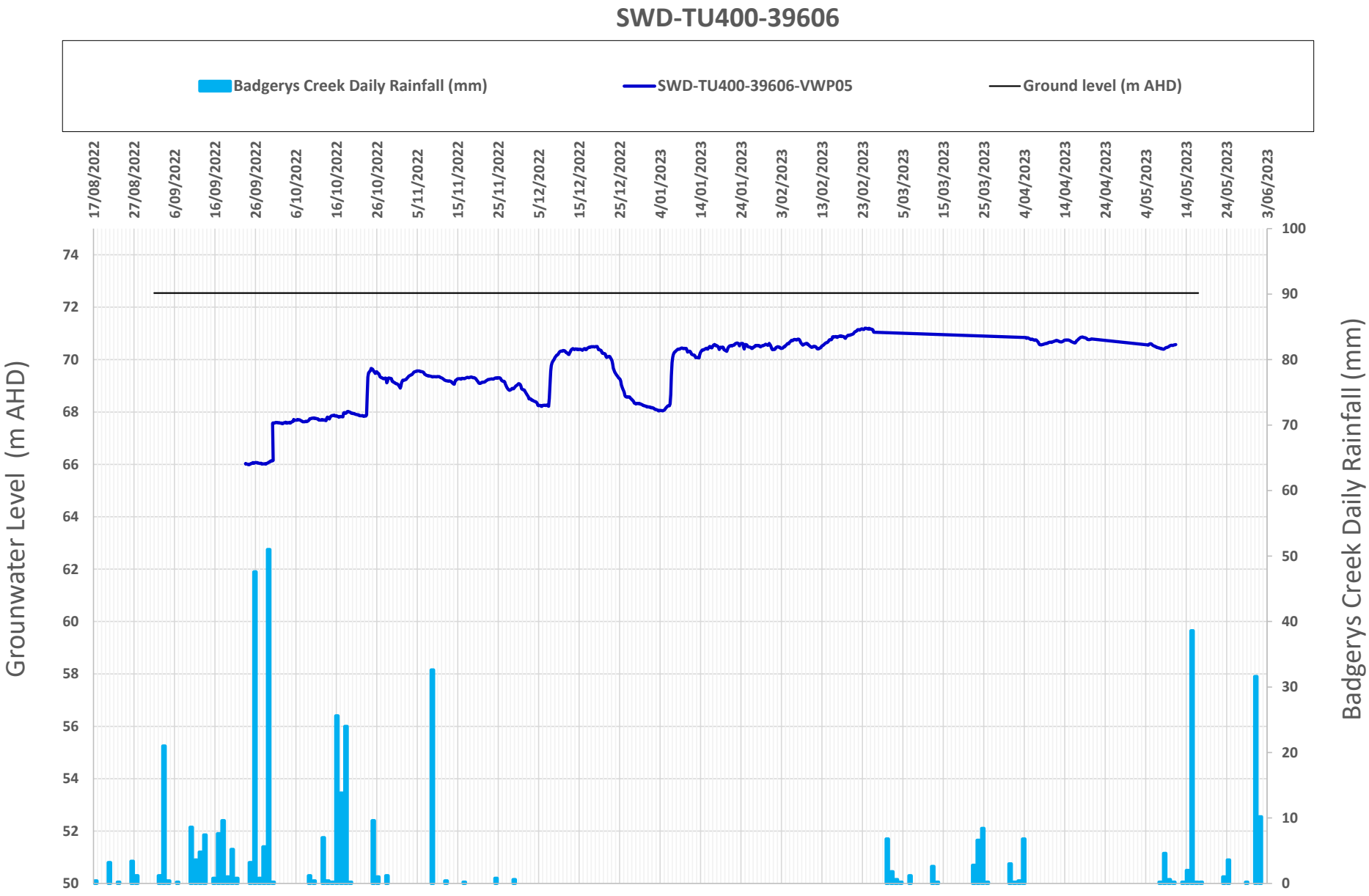

SWD-TU400-39565
Badgerys Creek Daily Rainfall (mm)
SWD-TU400-39565-VWP04-A
SWD-TU400-39565-VWP04-B
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
74
72
70
68
66
64
62
60
200
180
160
140
120
100
80
60
40
20
0


SWD-TU400-39606
Badgerys Creek Daily Rainfall (mm)
SWD-TU400-39606-VWP05
Ground level (m AHD)
Grounwater Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
17/08/2022
27/08/2022
6/09/2022
16/09/2022
26/09/2022
6/10/2022
16/10/2022
26/10/2022
5/11/2022
15/11/2022
25/11/2022
5/12/2022
15/12/2022
25/12/2022
4/01/2023
14/01/2023
24/01/2023
3/02/2023
13/02/2023
23/02/2023
5/03/2023
15/03/2023
25/03/2023
4/04/2023
14/04/2023
24/04/2023
4/05/2023
14/05/2023
24/05/2023
3/06/2023
74
72
70
68
66
64
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100
90
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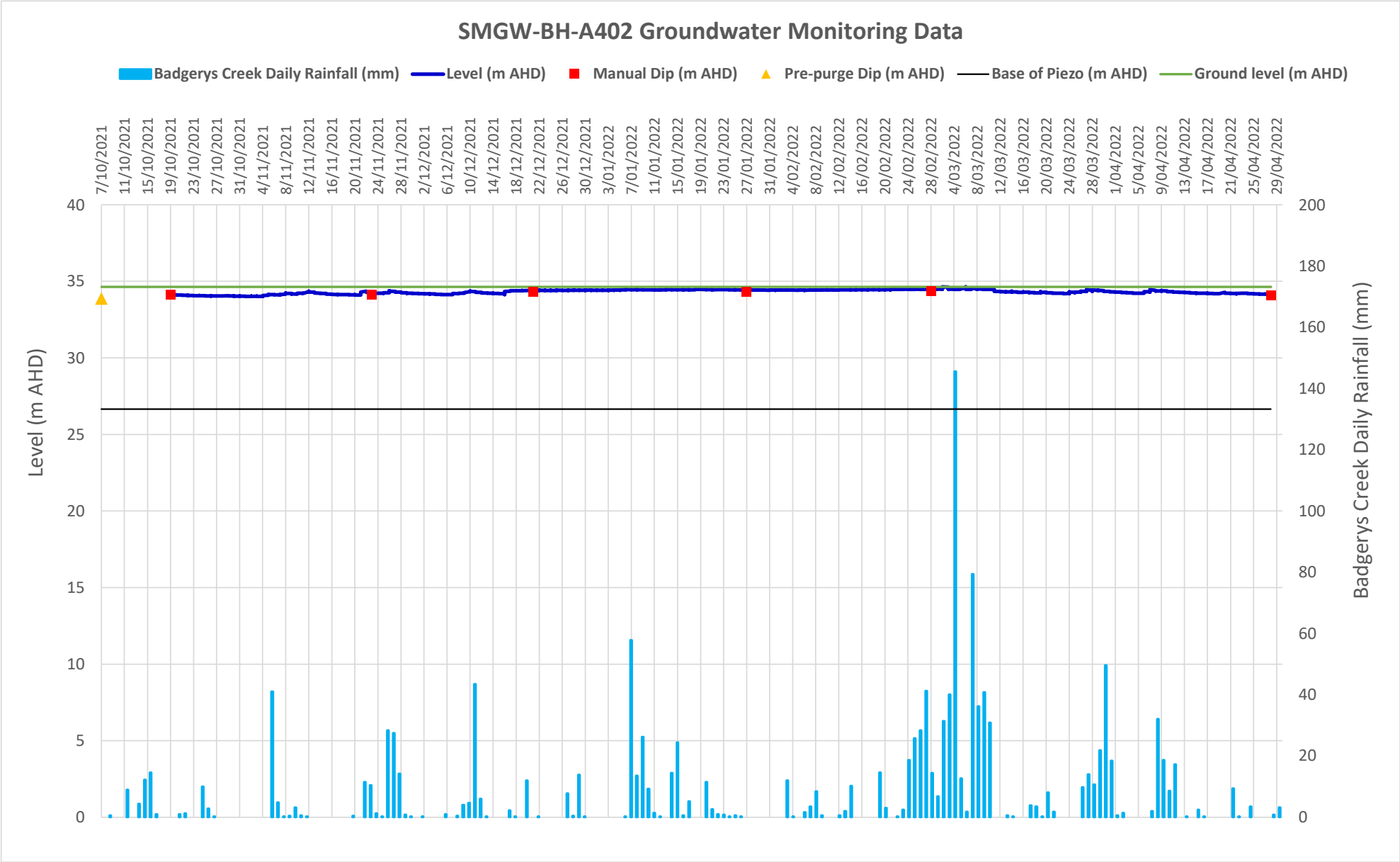
70
60
50
40
30
20
10
0


SMGW-BH-A402 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
40
35
30
25
20
15
10
5
0
200
180
160
140
120
100
80
60
40
20
0
7/10/2021
11/10/2021
15/10/2021
19/10/2021
23/10/2021
27/10/2021
31/10/2021
4/11/2021
8/11/2021
12/11/2021
16/11/2021
20/11/2021
24/11/2021
28/11/2021
2/12/2021
6/12/2021
10/12/2021
14/12/2021
18/12/2021
22/12/2021
26/12/2021
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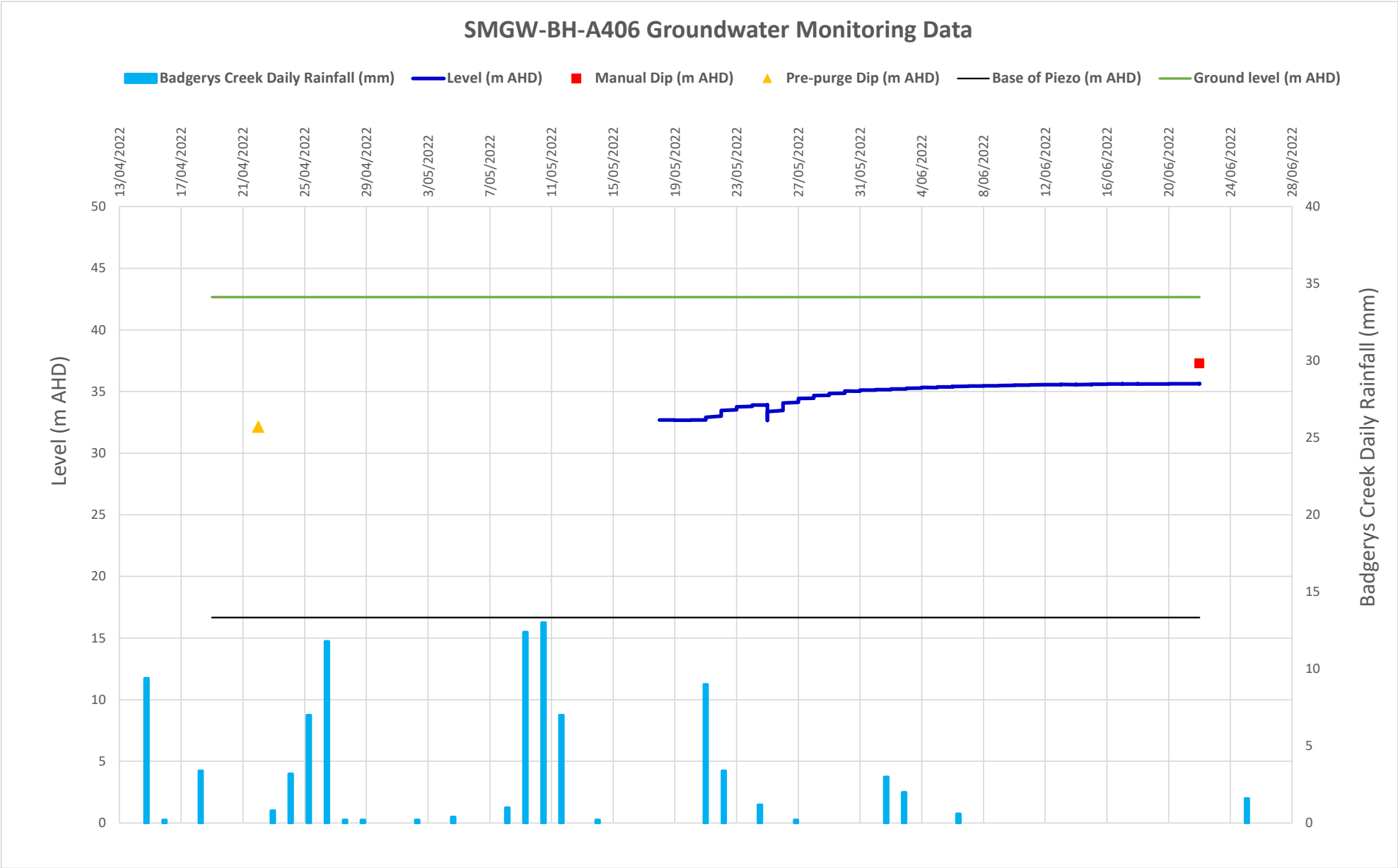
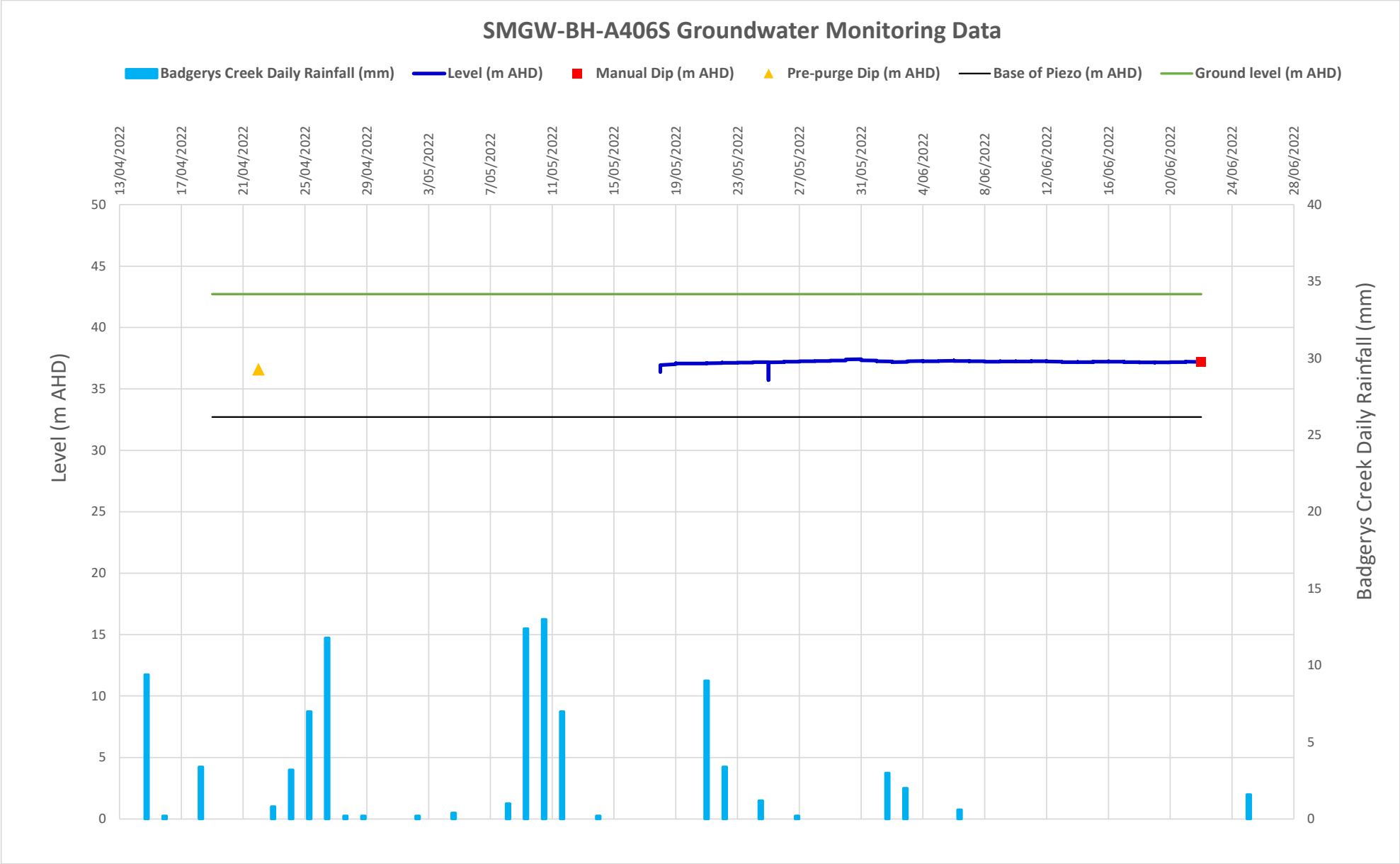
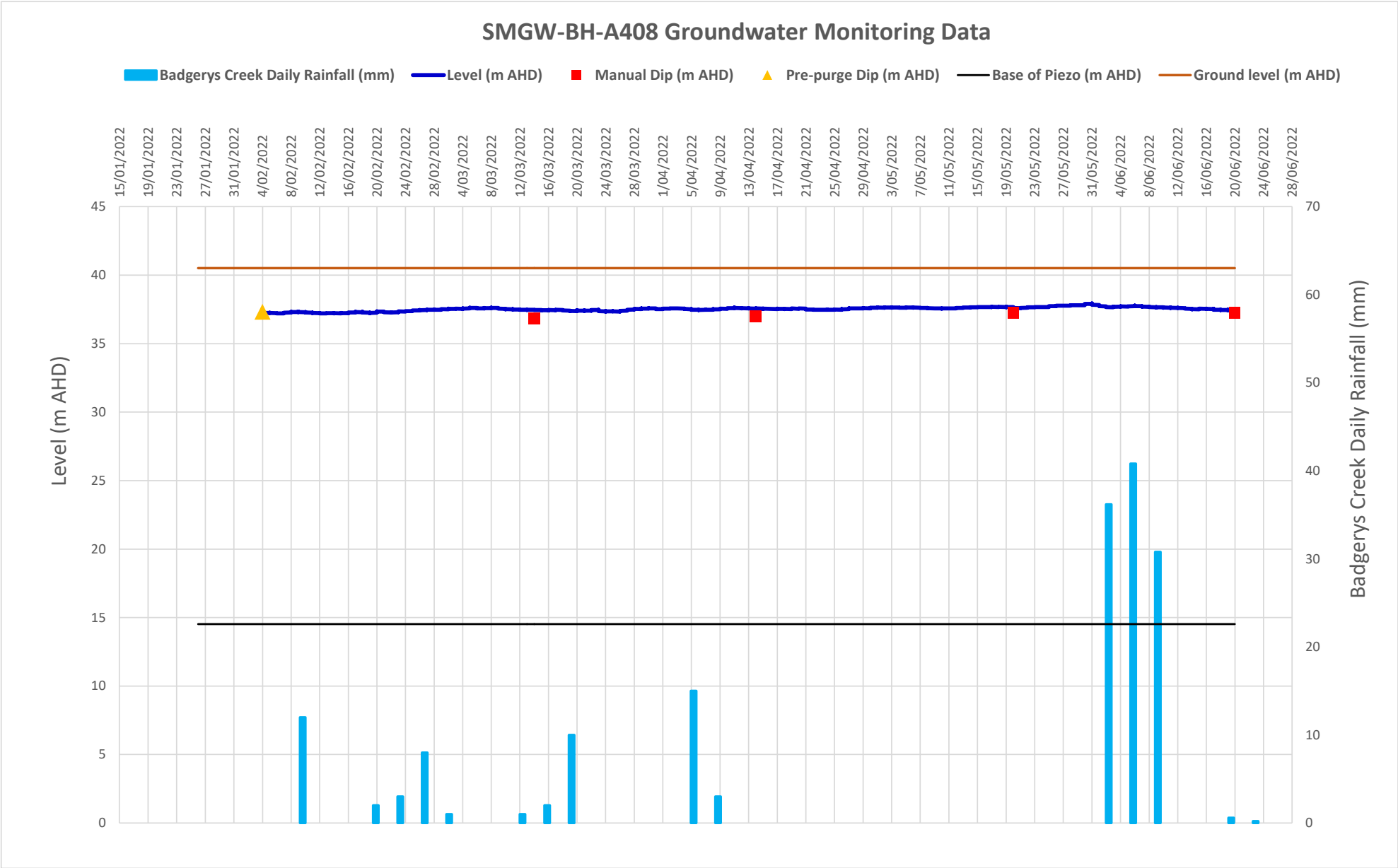
3/01/2022
7/01/2022
11/01/2022
15/01/2022
19/01/2022
23/01/2022
27/01/2022
31/01/2022
4/02/2022
8/02/2022
12/02/2022
16/02/2022
20/02/2022
24/02/2022
28/02/2022
4/03/2022
8/03/2022
12/03/2022
16/03/2022
20/03/2022
24/03/2022
28/03/2022
1/04/2022
5/04/2022
9/04/2022
13/04/2022
17/04/2022
21/04/2022
25/04/2022
29/04/2022


SMGW-BH-A406 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
13/04/2022
17/04/2022
21/04/2022
25/04/2022
29/04/2022
3/05/2022
7/05/2022
11/05/2022
15/05/2022
19/05/2022
23/05/2022
27/05/2022
31/05/2022
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
0
5
10
15
20
25
30
35
40
45
50


SMGW-BH-A406S Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
13/04/2022
17/04/2022
21/04/2022
25/04/2022
29/04/2022
3/05/2022
7/05/2022
11/05/2022
15/05/2022
19/05/2022
23/05/2022
27/05/2022
31/05/2022
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
0
5
10
15
20
25
30
35
40
45
50


SMGW-BH-A408 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
15/01/2022
19/01/2022
23/01/2022
27/01/2022
31/01/2022
4/02/2022
8/02/2022
12/02/2022
16/02/2022
20/02/2022
24/02/2022
28/02/2022
4/03/2022
8/03/2022
12/03/2022
16/03/2022
20/03/2022
24/03/2022
28/03/2022
1/04/2022
5/04/2022
9/04/2022
13/04/2022
17/04/2022
21/04/2022
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3/05/2022
7/05/2022
11/05/2022
15/05/2022
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23/05/2022
27/05/2022
31/05/2022
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
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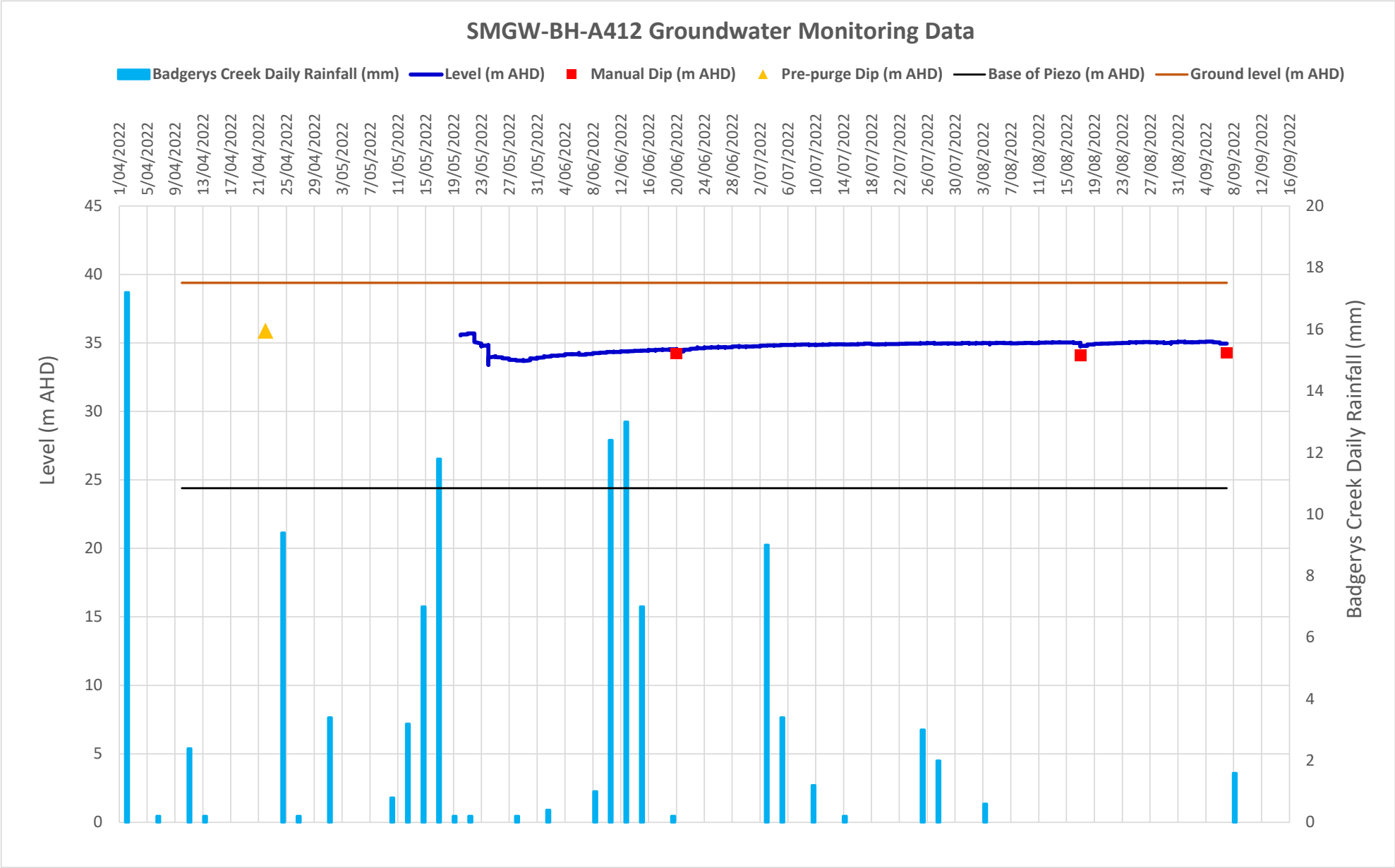
35
30
25
20
15
10
5
0
70
60
50
40
30
20
10
0


SMGW-BH-A412 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
45
40
35
30
25
20
15
10
5
0
20
18
16
14
12
10
8
6
4
2
0
1/04/2022
5/04/2022
9/04/2022
13/04/2022
17/04/2022
21/04/2022
25/04/2022
29/04/2022
3/05/2022
7/05/2022
11/05/2022
15/05/2022
19/05/2022
23/05/2022
27/05/2022
31/05/2022
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
2/07/2022
6/07/2022
10/07/2022
14/07/2022
18/07/2022
22/07/2022
26/07/2022
30/07/2022
3/08/2022
7/08/2022
11/08/2022
15/08/2022
19/08/2022
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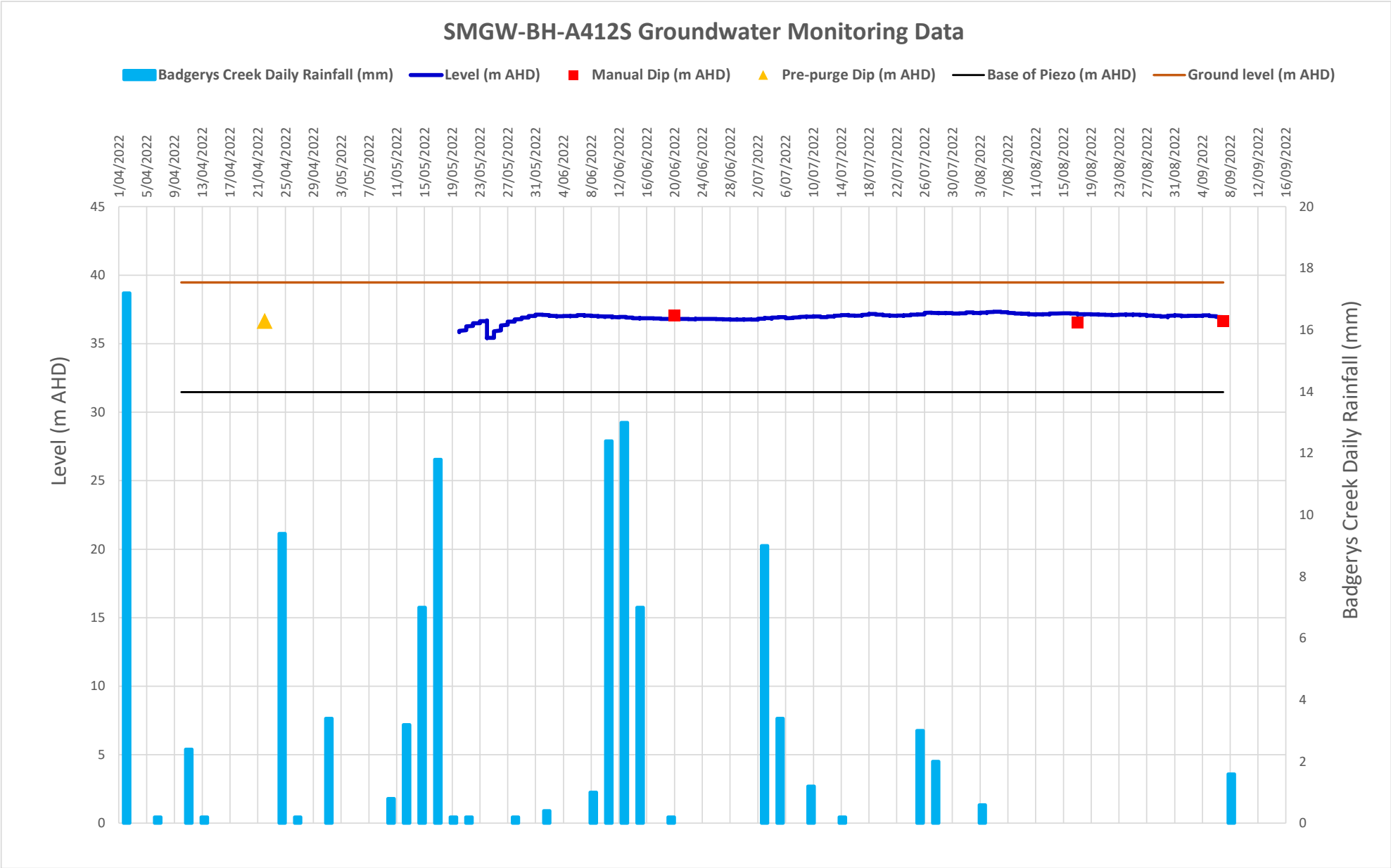
16/09/2022


SMGW-BH-A412S Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
1/04/2022
5/04/2022
9/04/2022
13/04/2022
17/04/2022
21/04/2022
25/04/2022
29/04/2022
3/05/2022
7/05/2022
11/05/2022
15/05/2022
19/05/2022
23/05/2022
27/05/2022
31/05/2022
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
2/07/2022
6/07/2022
10/07/2022
14/07/2022
18/07/2022
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26/07/2022
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3/08/2022
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11/08/2022
15/08/2022
19/08/2022
23/08/2022
27/08/2022
31/08/2022
4/09/2022
8/09/2022
12/09/2022
16/09/2022
45
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35
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16
14
12
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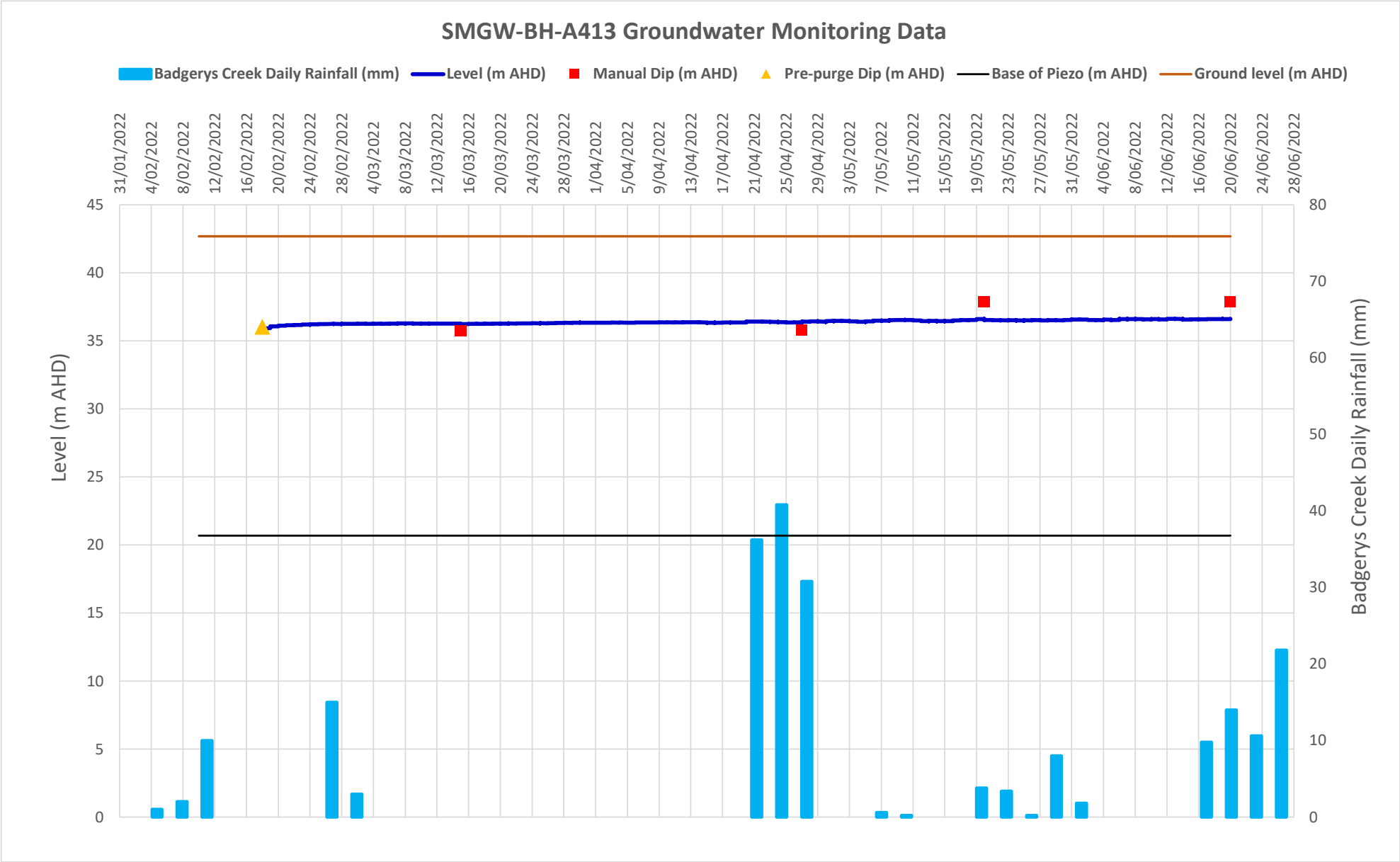
8
6
4
2
0


SMGW-BH-A413 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
45
40
35
30
25
20
15
10
5
0
80
70
60
50
40
30
20
10
0
31/01/2022
4/02/2022
8/02/2022
12/02/2022
16/02/2022
20/02/2022
24/02/2022
28/02/2022
4/03/2022
8/03/2022
12/03/2022
16/03/2022
20/03/2022
24/03/2022
28/03/2022
1/04/2022
5/04/2022
9/04/2022
13/04/2022
17/04/2022
21/04/2022
25/04/2022
29/04/2022
3/05/2022
7/05/2022
11/05/2022
15/05/2022
19/05/2022
23/05/2022
27/05/2022
31/05/2022
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
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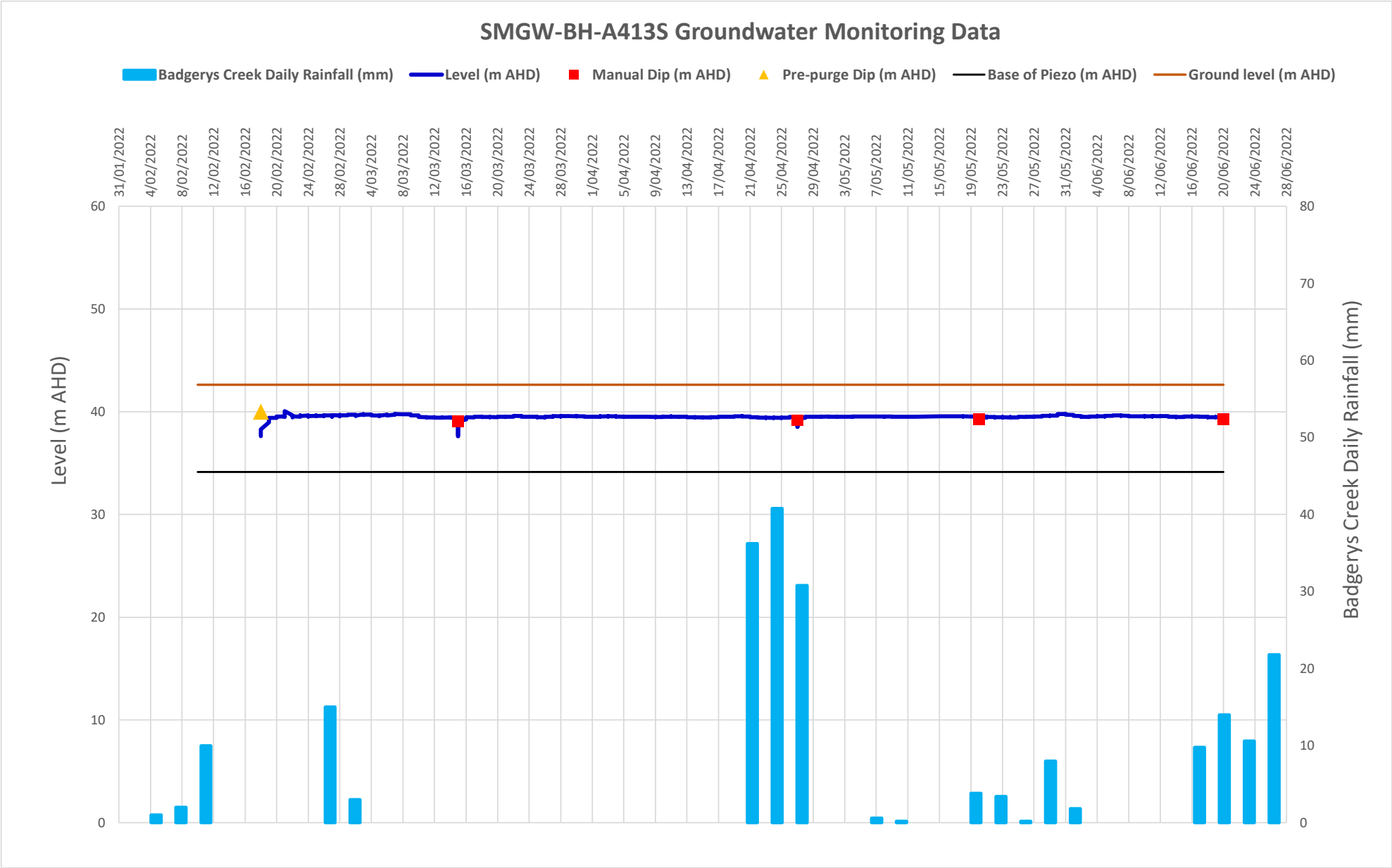
28/06/2022


SMGW-BH-A413S Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
0
10
20
30
40
50
60
70
80
31/01/2022
4/02/2022
8/02/2022
12/02/2022
16/02/2022
20/02/2022
24/02/2022
28/02/2022
4/03/2022
8/03/2022
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3/05/2022
7/05/2022
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15/05/2022
19/05/2022
23/05/2022
27/05/2022
31/05/2022
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16/06/2022
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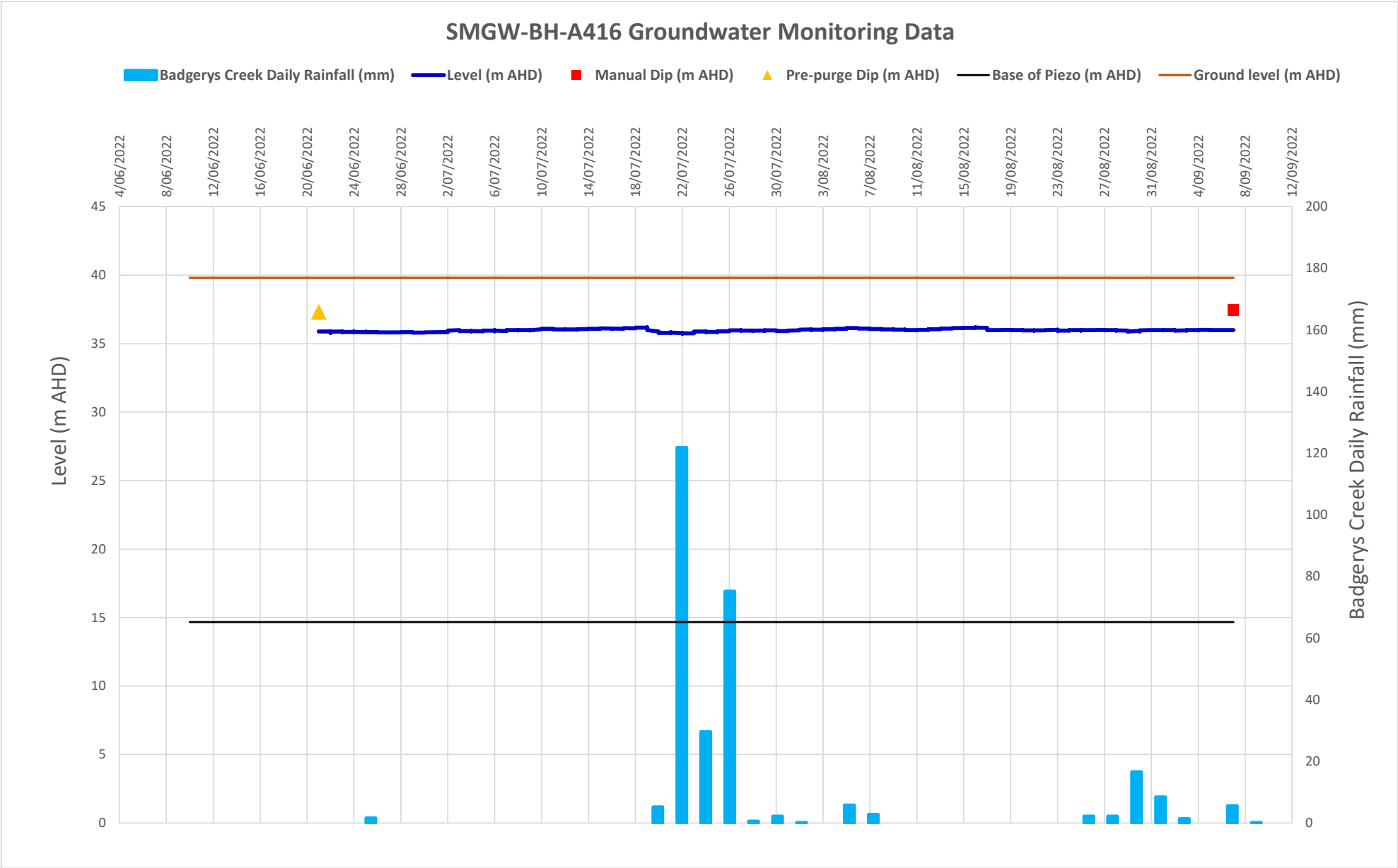
28/06/2022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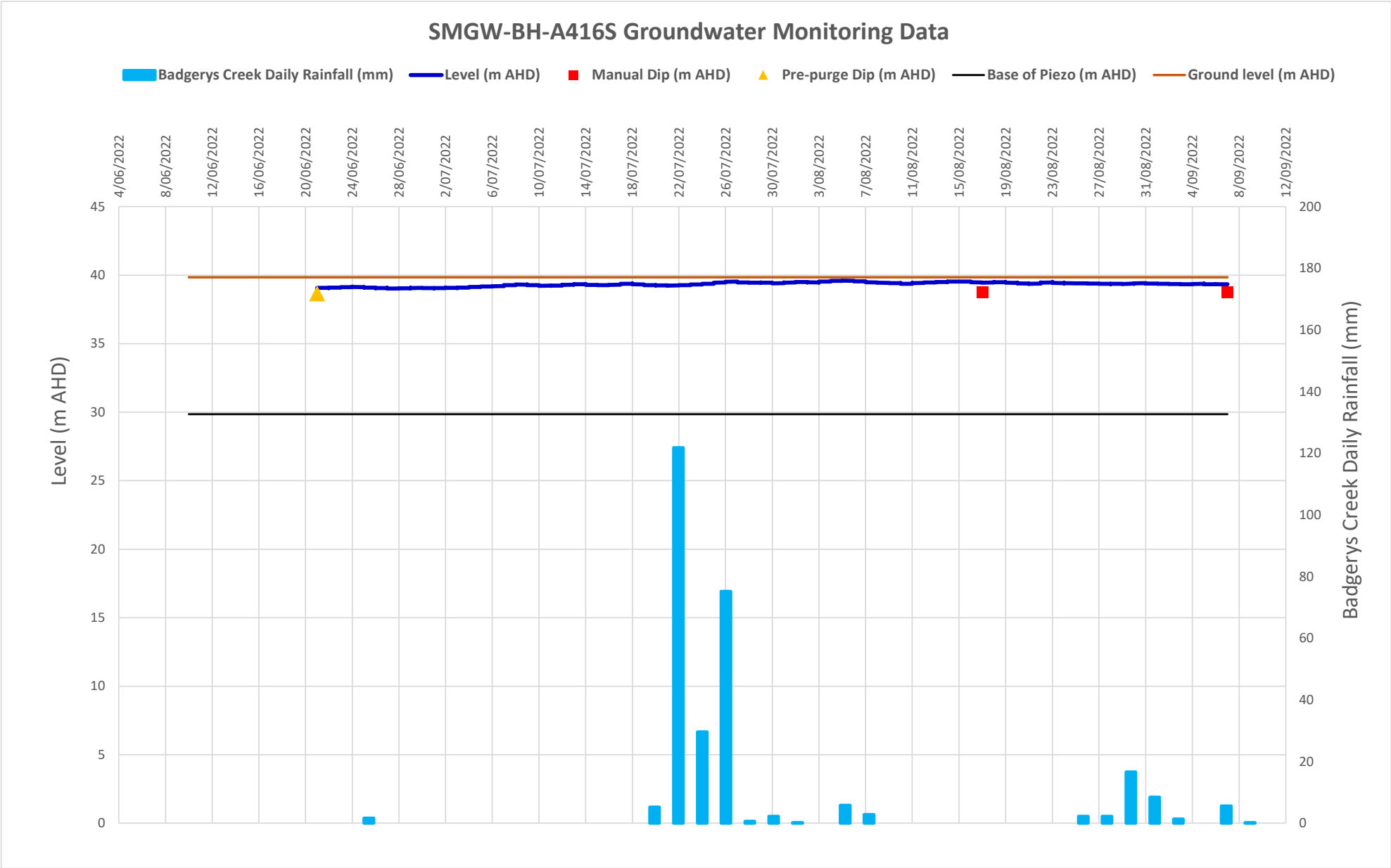
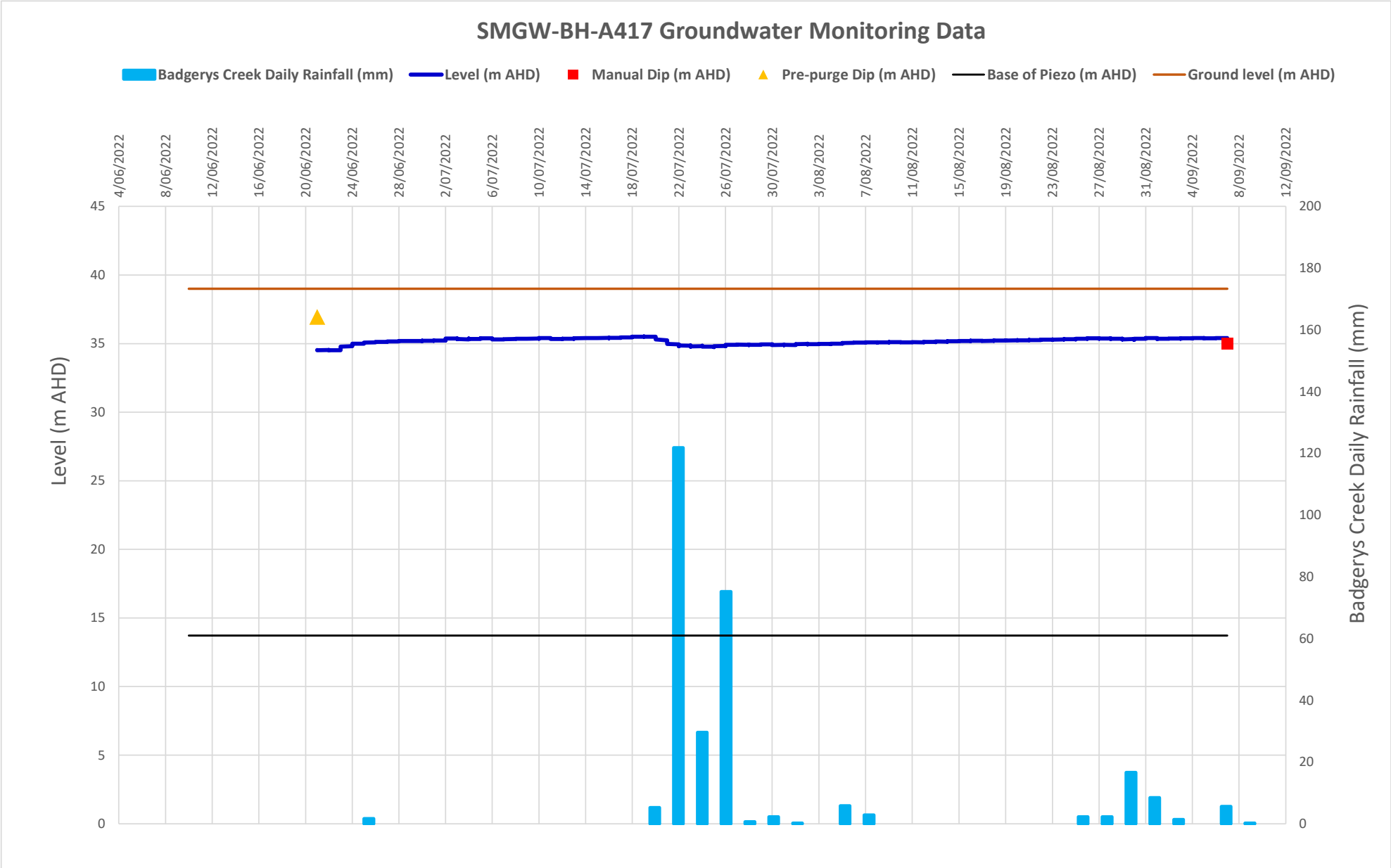
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
2/07/2022
6/07/2022
10/07/2022
14/07/2022
18/07/2022
22/07/2022
26/07/2022
30/07/2022
3/08/2022
7/08/2022
11/08/2022
15/08/2022
19/08/2022
23/08/2022
27/08/2022
31/08/2022
4/09/2022
8/09/2022
12/09/2022
Level (m AHD)
45
40
35
30
25
20
15
10
5
0
Badgerys Creek Daily Rainfall (mm)
200
180
160
140
120
100
80
60
40
20
0


SMGW-BH-A416S Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
2/07/2022
6/07/2022
10/07/2022
14/07/2022
18/07/2022
22/07/2022
26/07/2022
30/07/2022
3/08/2022
7/08/2022
11/08/2022
15/08/2022
19/08/2022
23/08/2022
27/08/2022
31/08/2022
4/09/2022
8/09/2022
12/09/2022
Level (m AHD)
45
40
35
30
25
20
15
10
5
0
Badgerys Creek Daily Rainfall (mm)
200
180
160
140
120
100
80
60
40
20
0


SMGW-BH-A417 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
2/07/2022
6/07/2022
10/07/2022
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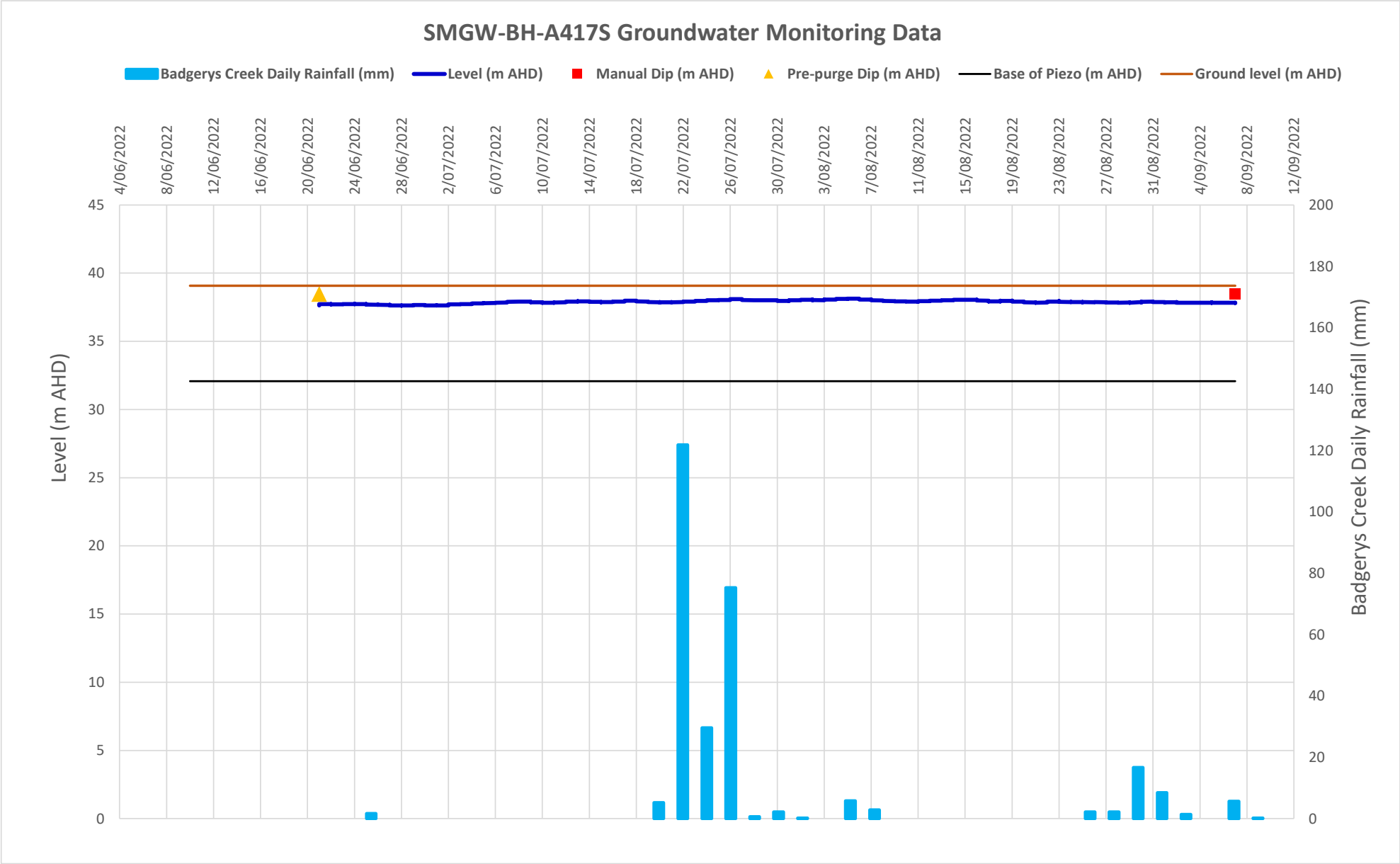
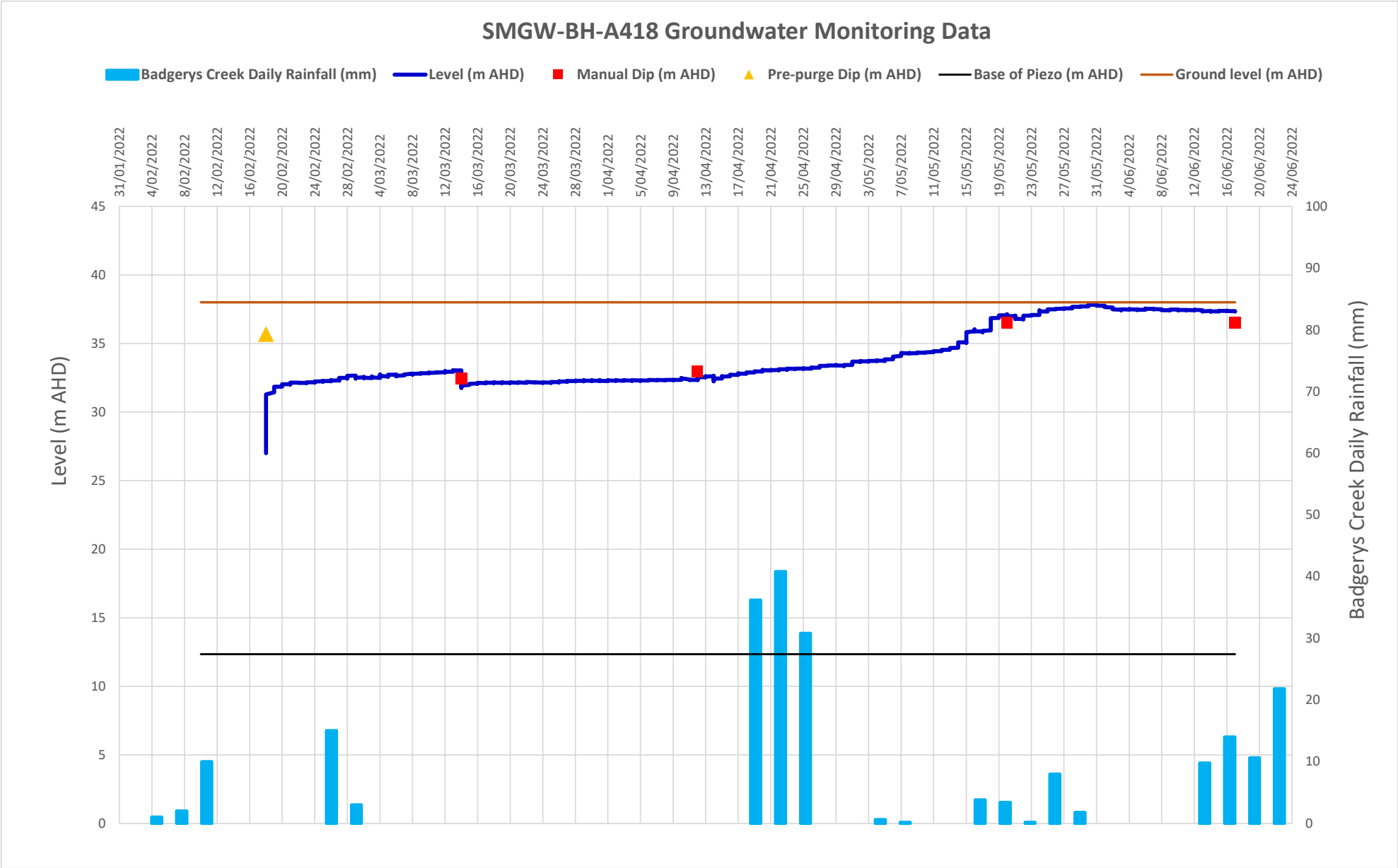
22/07/2022
26/07/2022
30/07/2022
3/08/2022
7/08/2022
11/08/2022
15/08/2022
19/08/2022
23/08/2022
27/08/2022
31/08/2022
4/09/2022
8/09/2022
12/09/2022
Level (m AHD)
45
40
35
30
25
20
15
10
5
0
Badgerys Creek Daily Rainfall (mm)
200
180
160
140
120
100
80
60
40
20
0


SMGW-BH-A417S Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
2/07/2022
6/07/2022
10/07/2022
14/07/2022
18/07/2022
22/07/2022
26/07/2022
30/07/2022
3/08/2022
7/08/2022
11/08/2022
15/08/2022
19/08/2022
23/08/2022
27/08/2022
31/08/2022
4/09/2022
8/09/2022
12/09/2022
Level (m AHD)
45
40
35
30
25
20
15
10
5
0
Badgerys Creek Daily Rainfall (mm)
200
180
160
140
120
100
80
60
40
20
0


SMGW-BH-A418 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
31/01/2022
4/02/2022
8/02/2022
12/02/2022
16/02/2022
20/02/2022
24/02/2022
28/02/2022
4/03/2022
8/03/2022
12/03/2022
16/03/2022
20/03/2022
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9/04/2022
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3/05/2022
7/05/2022
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27/05/2022
31/05/2022
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
45
40
35
30
25
20
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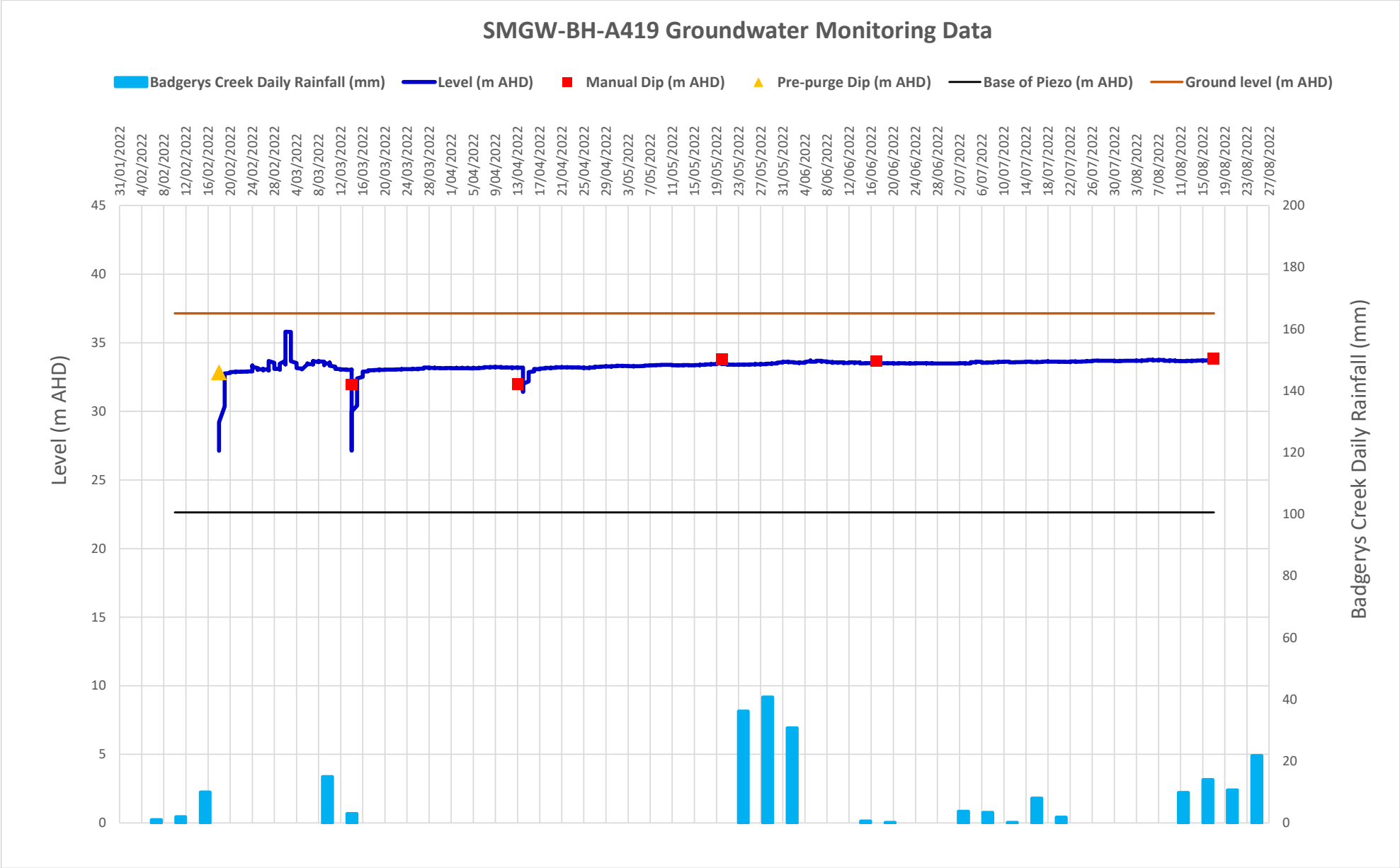
20
10
0


SMGW-BH-A419 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
45
40
35
30
25
20
15
10
5
0
200
180
160
140
120
100
80
60
40
20
0
31/01/2022
4/02/2022
8/02/2022
12/02/2022
16/02/2022
20/02/2022
24/02/2022
28/02/2022
4/03/2022
8/03/2022
12/03/2022
16/03/2022
20/03/2022
24/03/2022
28/03/2022
1/04/2022
5/04/2022
9/04/2022
13/04/2022
17/04/2022
21/04/2022
25/04/2022
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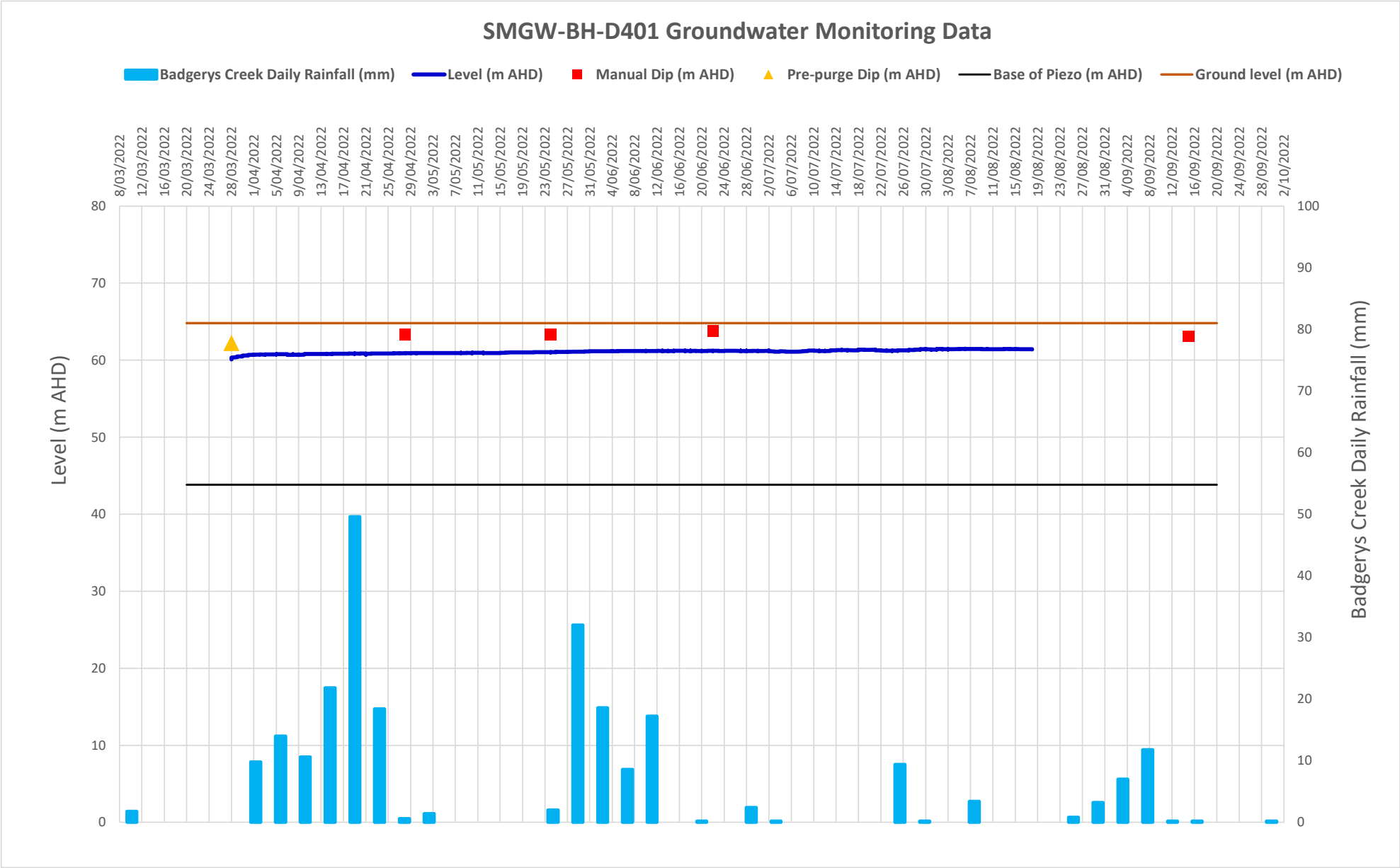
23/05/2022
27/05/2022
31/05/2022
4/06/2022
8/06/2022
12/06/2022
16/06/2022
20/06/2022
24/06/2022
28/06/2022
2/07/2022
6/07/2022
10/07/2022
14/07/2022
18/07/2022
22/07/2022
26/07/2022
30/07/2022
3/08/2022
7/08/2022
11/08/2022
15/08/2022
19/08/2022
23/08/2022
27/08/2022


SMGW-BH-D401 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
0
10
20
30
40
50
60
70
80
90
100
8/03/2022
12/03/2022
16/03/2022
20/03/2022
24/03/2022
28/03/2022
1/04/2022
5/04/2022
9/04/2022
13/04/2022
17/04/2022
21/04/2022
25/04/2022
29/04/2022
3/05/2022
7/05/2022
11/05/2022
15/05/2022
19/05/2022
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27/05/2022
31/05/2022
4/06/2022
8/06/2022
12/06/2022
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3/08/2022
7/08/2022
11/08/2022
15/08/2022
19/08/2022
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27/08/2022
31/08/2022
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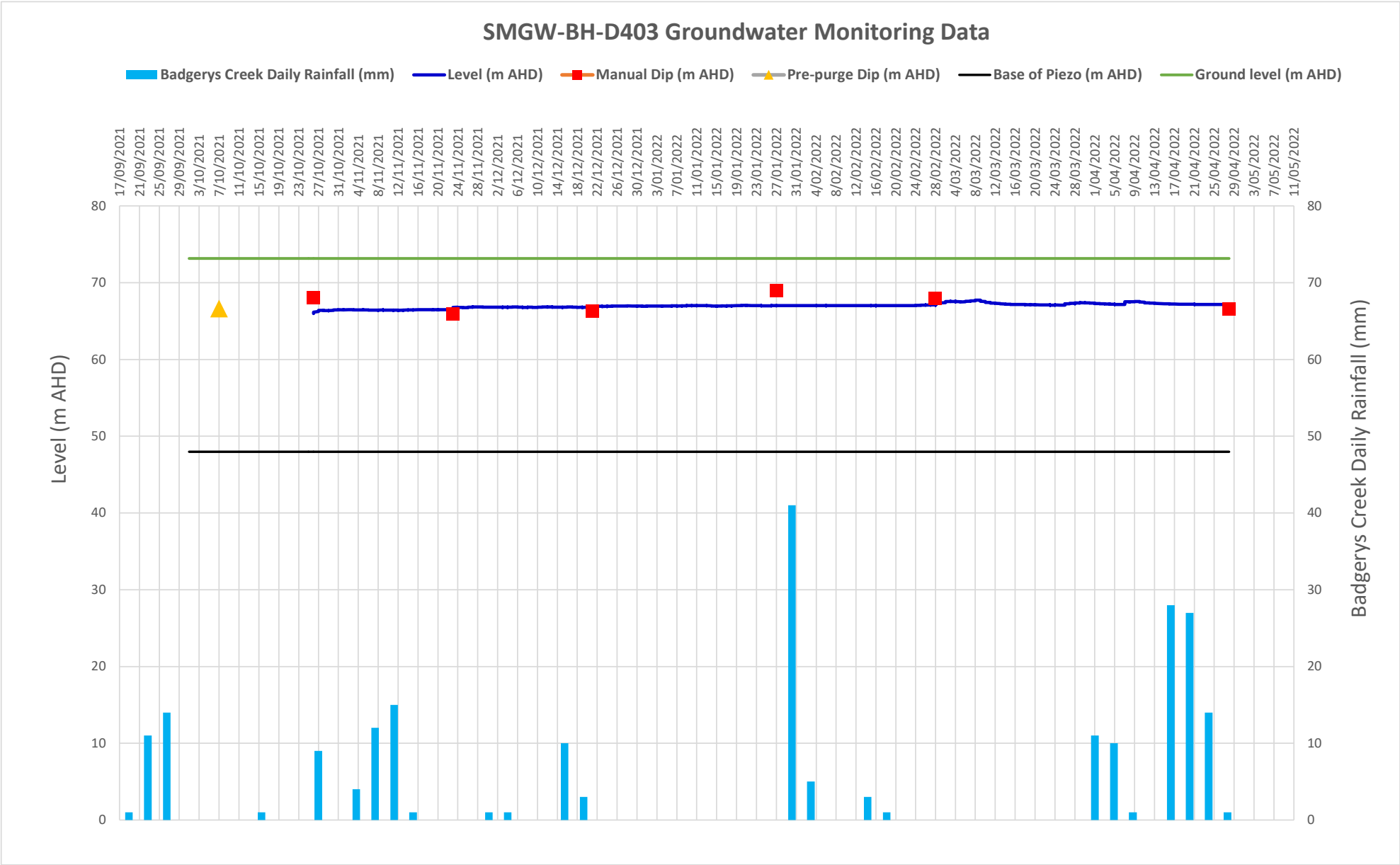
28/09/2022
2/10/2022


SMGW-BH-D403 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
0
10
20
30
40
50
60
70
80
17/09/2021
21/09/2021
25/09/2021
29/09/2021
3/10/2021
7/10/2021
11/10/2021
15/10/2021
19/10/2021
23/10/2021
27/10/2021
31/10/2021
4/11/2021
8/11/2021
12/11/2021
16/11/2021
20/11/2021
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2/12/2021
6/12/2021
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3/01/2022
7/01/2022
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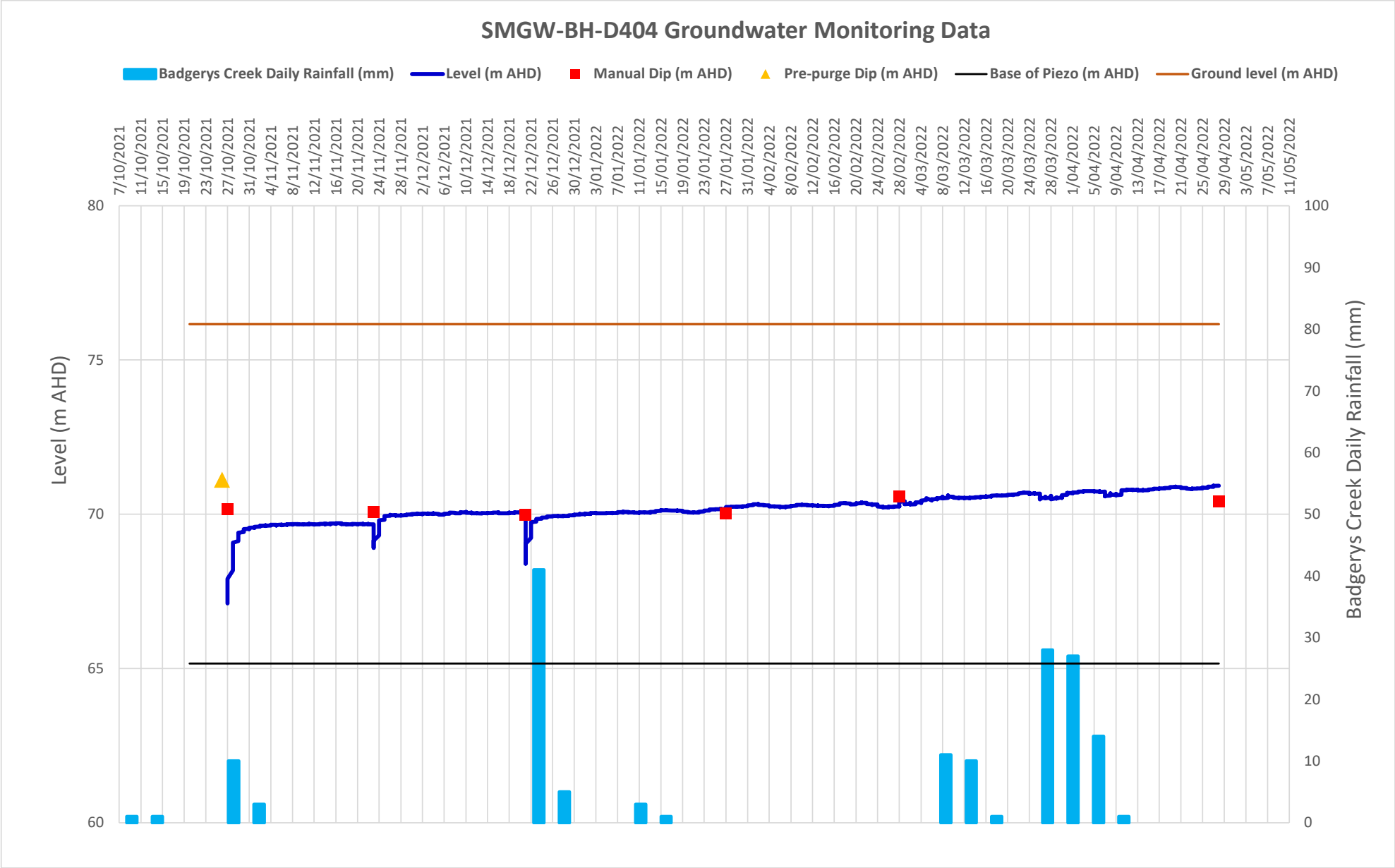
SMGW-BH-D404 Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
80
75
70
65
60
100
90
80
70
60
50
40
30
20
10
0
7/10/2021
11/10/2021
15/10/2021
19/10/2021
23/10/2021
27/10/2021
31/10/2021
4/11/2021
8/11/2021
12/11/2021
16/11/2021
20/11/2021
24/11/2021
28/11/2021
2/12/2021
6/12/2021
10/12/2021
14/12/2021
18/12/2021
22/12/2021
26/12/2021
30/12/2021
3/01/2022
7/01/2022
11/01/2022
15/01/2022
19/01/2022
23/01/2022
27/01/2022
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4/02/2022
8/02/2022
12/02/2022
16/02/2022
20/02/2022
24/02/2022
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4/03/2022
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12/03/2022
16/03/2022
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5/04/2022
9/04/2022
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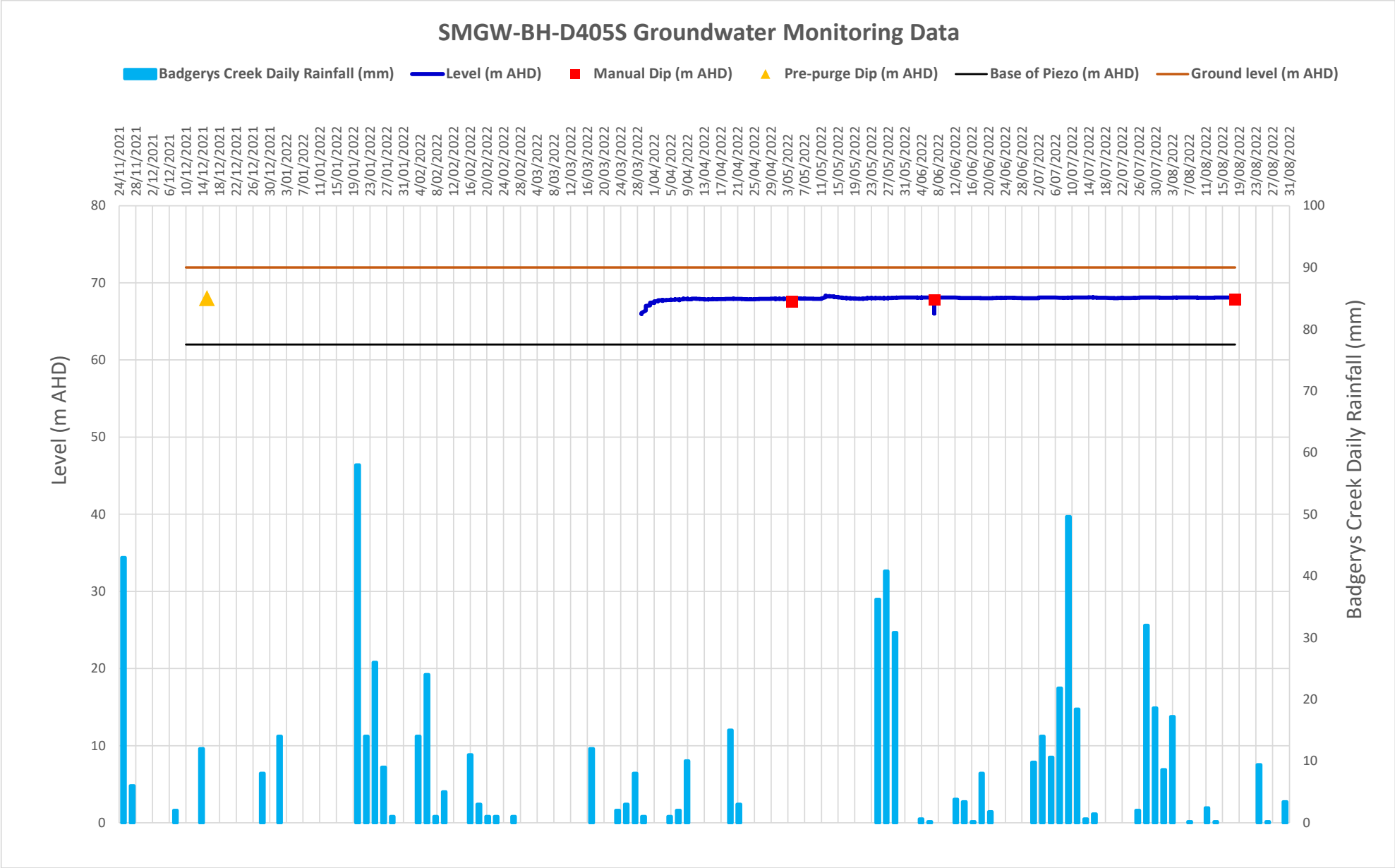
11/05/2022


SMGW-BH-D405S Groundwater Monitoring Data
Badgerys Creek Daily Rainfall (mm)
Level (m AHD)
Manual Dip (m AHD)
Pre-purge Dip (m AHD)
Base of Piezo (m AHD)
Ground level (m AHD)
Level (m AHD)
Badgerys Creek Daily Rainfall (mm)
80
70
60
50
40
30
20
10
0
100
90
80
70
60
50
40
30
20
10
0
24/11/2021
28/11/2021
2/12/2021
6/12/2021
10/12/2021
14/12/2021
18/12/2021
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4/02/2022
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7/08/2022
11/08/2022
15/08/2022
19/08/2022
23/08/2022
27/08/2022
31/08/2022

Annexure F QA/QC Data Validation Summary

Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works - Baseline Groundwater Assessment

Quality Assurance / Quality Control Report

Data to 10 May 2023

CPB Ghella Joint Venture

Reference: 754-SYDGE292575-4

19 May 2023

SYDNEY METRO WESTERN SYDNEY AIRPORT STATION BOXES AND TUNNELLING WORKS - BASELINE GROUNDWATER ASSESSMENT

Quality Assurance / Quality Control Report

Report reference number: 754-SYDGE292575-4
19 May 2023

PREPARED FOR

CPB Ghella Joint Venture

PREPARED BY

Tetra Tech Coffey
Level 19, Tower B, Citadel Tower, 799 Pacific Highway
Chatswood
NSW 2067 Australia
p: +61 2 9406 1000
f: +61 2 9415 1678
ABN 55 139 460 521

QUALITY INFORMATION

Revision history

Revision	Description	Date	Author	Reviewer	Approver
Preliminary Draft	Preliminary QA/QC assessment	19/05/2023	ES	CO'F	CO'F

Restriction on Disclosure and Use of Data
This report includes groundwater quality data available up to 10 May 2023

Template #

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1. INTRODUCTION TO QUALITY CONTROL

This report is intended to provide a assessment of the quality of groundwater samples collected between 21 August 2022 and 1 May 2023 to inform the baseline assessment of groundwater quality for the Sydney Metro Western Sydney Airport Station Boxes and Tunnelling (SBT) project. The groundwater baseline assessment as outlined in Section 5.1 and Appendix A of the Groundwater Monitoring Plan (SMWSASBT-CPG-SWD-SW000-GE-RPT-040404) has not been fully completed, with a number of locations across the alignment yet to be sampled.

This assessment does not include groundwater samples collected outside of the above time period (such as pre-award phase), or for purposes other than the baseline groundwater program. Note that the quality assessment for groundwater sampled for the SBT Detailed Site Investigations is provided elsewhere.

The steps in the sampling and analysis process are subject to natural and inherent variability, and this can affect the results produced, and the overall quality of the data sets generated. In order to minimise the effect of this, standard procedures were used throughout works carried out in the field and laboratory. The use of such procedures represents one aspect of the quality assurance process. To measure the effectiveness of the quality assurance process, quality control samples were tested, and other quality control tests were conducted during the analysis of samples taken in the field.

Quality control (QC) samples and tests can be used to assess both the accuracy and the precision of the results produced.

- Measures of ACCURACY provide information on how close to the true result is the reported result. For practical reasons, measures of accuracy are usually confined to the laboratory steps in the overall process.
- Measures of PRECISION provide information on the variability in the results. Precision can be assessed as:
  - “Repeatability” or intra-laboratory variation – the degree of variation in a result when the same laboratory analyses a sample (or blind replicate) several times; and
  - “Reproducibility” or inter-laboratory variation – the degree of variation in a result when a different laboratory separately analyses a sample.

In addition, blank samples can be used to assess whether extraneous materials and factors have contributed to the results obtained from the sampling and analysis process.

2. QC SAMPLING PROGRAM

2.1 ANALYTICAL LABORATORY PROCESSES

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS

- Nil

Analytical Laboratory Processes	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

2.2 SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the samples in proper custody between the field and reaching the laboratory?	☒	☐
2. Were the samples properly and adequately preserved? This includes keeping the samples chilled, where applicable.	☒	☐
3. Were the samples received by the laboratory in good condition?	☒	☐

COMMENTS

- Nil

Sample Handling was:	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

3. FIELD QA/QC

3.1 FIELD QC SAMPLE SUMMARY

This report provides a preliminary assessment of groundwater samples collected between 21 August 2022 and 10 May2023. The QC samples have been collected as part of the SBT project-wide baseline groundwater assessment, and as such the assessment of QC sample frequency has been based on project-wide adequacy of sampling.

3.2 FIELD REPLICATES

Duplicate samples were used to identify the variation in analyte concentration between samples collected from the same sampling point and/or repeatability of the laboratory analysis. In addition, triplicate samples assessed the variation between the analytical laboratories.

3.2.1 Field Replicate Sample Frequency

Duplicate and triplicate samples were proposed to be collected on an average frequency of one sample per twenty primary samples, resulting in an overall ratio of 1:10. Table 3.1 provides a preliminary summary of the primary to duplicate and triplicate ratio available for the project to date. The field replicate sample frequency is consistent with one QC sample per twenty primary samples, and an overall ration of <1:10.

Table 3-1: Summary of QC Samples

Matrix Description	Primary Samples	Duplicate Samples	Triplicate Samples	Duplicate Ratio	Triplicate Ratio	QC : Primary Ratio
Water	163	11	11	1:15	1:15	1:7.5

Table 3.2 provides a list of all duplicate and triplicate sample combinations.

Table 3-2: Duplicate Sample Combinations

Primary Sample	Field Duplicate Sample	Field Triplicate Sample	Primary Laboratory (ALS) Report ID	Secondary Laboratory (Eurofins) Report ID
SBT-GW-1002	QC1_221122_JF	QC1_221122_JF	ES2242287	944217
BH207	QC3_301122_JP	QC4_301122_JP	ES2243342	947717
MW02	QC5_011122_JP	QC6_011122_JP	ES2243500	947722
SBT-GW-1024	QC7_071222_JF	QC8_071222_JF	ES2244263	948785
SBT-GW-1043	QC9_131222_TX	QC10_131222_TX	ES2245132	952003
SMGW-GW02D	QC7_121222_JP	QC8_121222_JP	ES2244937	952023
SBT-GW-3003A	QC13_151222_JP	QC14_151222_JP	ES2245622	952030
SBT-GW-3022	QC15_151222_JP	QC16_151222_JP	ES2245622	952030
SBT-GW-1022	QC17_160123_JF	QC18_160123_JF	ES2301276	956804
SBT-GW-4021	QC19_180123_JF	QC20_180123_JF	ES2301641	957580
SBT-GW-0001	QC23_160323_KT	QC24-160323-KT	ES2308792	973384

Comments:

The frequency of QC samples indicates that sufficient field replicates have been collected to date. The assessment of field replicate sample frequencies is preliminary, and will be revised following completion of the baseline assessment.

QC Sample Frequency was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

3.2.2 Field Duplicate Results

Acceptance targets for duplicate and triplicate samples are based on the Relative Percent Difference (RPD) between results, which is calculated by the following equation:

$$\frac{|[a]-[b]|}{[a]+[b]} \times 200$$

Where:

[a] = concentration of analyte in primary sample

[b] = concentration of analyte in replicate sample

Precision of the sample collection, transport and analysis process is measured by the relative percent difference (RPD) between duplicate results. Typical relative percent difference is 30% – 50% of mean concentration of analyte. This variation can be higher for organic analytes than for inorganics, and for low concentration of analytes (close to the limit of detection).

Coffey has adopted the following objectives for field duplicate RPDs:

- 30% where the concentration of an analyte is greater than 20 times the laboratory limit of reporting (LOR).
- 50% where the concentration of an analyte is less than 20 times the LOR.
- RPDs have not been considered where both the primary and replicate sample concentrations are reported to be less than 10 times the LOR, as the low concentrations exaggerate the calculated RPD.
- RPDs have not been considered for any analytes that are calculations of multiple analytes such as: "$TRHC_6$-C_{10} less BTEX" and "Sum of PAHs", as the calculated totals duplicate the analysis and can exaggerate the calculated RPDs where LOR values are substituted for <LOR. Any issues will be identified by checking the RPD for each individual analyte.

The calculated RPDs for replicate samples exceeding the adopted objectives are provided in Table 3-3 below. Where RPDs were outside the acceptable range, sampling procedures, laboratory analytical methods and laboratory results have been investigated. The results of this review will be presented in the final QAQC assessment once baseline sampling is complete.

Table 3-3: Groundwater RPDs outside acceptable ranges

Date	Primary Sample ID	QC Sample ID	Sample Type	Analyte	Primary Laboratory LOR (ug/L)	Primary Result (ug/L)	QC Result (ug/L)	RPD (%)
22/11/2022	SBT-GW-1002_221122	QC1_221122_JF	Duplicate	Iron (Total)	50	330	1,270	118
22/11/2022	SBT-GW-1002_221122	QC1_221122_JF	Duplicate	Aluminium (Total)	10	2,030	2,770	31
22/11/2022	SBT-GW-1002_221122	QC1_221122_JF	Duplicate	Manganese (Total)	1	20	38	62
22/11/2022	SBT-GW-1002_221122	QC1_221122_JF	Duplicate	Total Phosphorus (as P)	10	40	320	156
22/11/2022	SBT-GW-1002_221122	QC1_221122_JF	Duplicate	Nitrate (as NO3-N)	10	90	840	161
22/11/2022	SBT-GW-1002_221122	QC1_221122_JF	Duplicate	Total Kjeldahl Nitrogen (as N)	100	200	800	120
30/11/2022	BH207_301122	QC3_301122-JP	Duplicate	Copper (Filtered)	1	45	25	57
1/12/2022	MW02_011222	QC5-011222-JP	Duplicate	Manganese (Filtered)	1	1,160	844	32
1/12/2022	MW02_011222	QC5-011222-JP	Duplicate	Aluminium (Total)	10	4,090	7,230	55
1/12/2022	MW02_011222	QC5-011222-JP	Duplicate	Manganese (Total)	1	1,550	935	49
1/12/2022	MW02_011222	QC5-011222-JP	Duplicate	Nitrate (as NO3-N)	10	160	80	67
7/12/2022	SBT-GW-1024_071222	QC7_071222_SF	Duplicate	Nitrate (as NO3-N)	10	2,670	480	139
12/12/2022	SMGW-GW02-D	QC7-121222-JP	Duplicate	Manganese (Filtered)	1	131	232	56
13/12/2022	SBT-GW-1043	QC9-131222_TX	Duplicate	Aluminium (Filtered)	10	1,020	2,880	95
13/12/2022	SBT-GW-1043	QC9-131222_TX	Duplicate	Iron (Filtered)	50	25,800	13,000	66
13/12/2022	SBT-GW-1043	QC9-131222_TX	Duplicate	Aluminium (Total)	10	25,800	13,000	66
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Iron (Filtered)	50	1,590	3,180	67
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Manganese (Filtered)	1	567	239	81
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Iron (Total)	50	21,400	5,320	120
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Aluminium (Total)	10	10,800	1,000	166
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Manganese (Total)	1	539	276	65
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Potassium (Filtered)	1	28	43	42
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Reactive Phosphorus (as P)	10	60	<10	143
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Total Phosphorus (as P)	10	70	300	124
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Ammonia (as N)	10	1,300	3,050	80

Date	Primary Sample ID	QC Sample ID	Sample Type	Analyte	Primary Laboratory LOR (ug/L)	Primary Result (ug/L)	QC Result (ug/L)	RPD (%)
15/12/2022	SBT-GW-3022	QC15-151222-JP	Duplicate	Total Kjeldahl Nitrogen (as N)	100	1,900	3,700	64
16/01/2023	SBT-CM-1022	QC17_160123_JF	Duplicate	Nitrate (as NO3-N)	10	880	<10	196
18/01/2023	SBT-GW-4021	QC19_180123_JF	Duplicate	Total Kjeldahl Nitrogen (as N)	100	3,800	2,600	38
16/03/2023	SBT-GW-0001	QC23_160323_KT	Duplicate	Ammonia (as N)	10	140	80	55
22/11/2022	SBT-GW-1002_221122	QC2_221122_JF	Triplicate	Iron (Total)	50	330	1,900	141
22/11/2022	SBT-GW-1002_221122	QC2_221122_JF	Triplicate	Aluminium (Total)	10	2,030	3,300	48
22/11/2022	SBT-GW-1002_221122	QC2_221122_JF	Triplicate	Manganese (Total)	1	20	42	71
22/11/2022	SBT-GW-1002_221122	QC2_221122_JF	Triplicate	Total Phosphorus (as P)	10	40	310	154
22/11/2022	SBT-GW-1002_221122	QC2_221122_JF	Triplicate	Ammonia (as N)	10	<100	4,000	190
22/11/2022	SBT-GW-1002_221122	QC2_221122_JF	Triplicate	Nitrate (as NO3-N)	10	90	1,300	174
22/11/2022	SBT-GW-1002_221122	QC2_221122_JF	Triplicate	Nitrite (as NO2-N)	10	90	1,300	174
30/11/2022	BH207_301122	QC34-301122-JP	Triplicate	Aluminium (Total)	10	900	660	31
30/11/2022	BH207_301122	QC34-301122-JP	Triplicate	Total Phosphorus (as P)	10	180	70	88
1/12/2022	MW02_011222	QC6-01122-JP	Triplicate	Iron (Filtered)	50	<50	740	175
1/12/2022	MW02_011222	QC6-01122-JP	Triplicate	Aluminium (Filtered)	10	40	310	154
1/12/2022	MW02_011222	QC6-01122-JP	Triplicate	Manganese (Filtered)	1	1,160	640	58
1/12/2022	MW02_011222	QC6-01122-JP	Triplicate	Aluminium (Total)	10	4,090	2,500	48
1/12/2022	MW02_011222	QC6-01122-JP	Triplicate	Ammonia (as N)	10	360	50	151
1/12/2022	MW02_011222	QC6-01122-JP	Triplicate	Nitrate (as NO3-N)	10	160	560	111
1/12/2022	MW02_011222	QC6-01122-JP	Triplicate	Total Kjeldahl Nitrogen (as N)	100	1,400	2,900	70
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	Iron (Total)	50	11,300	16,000	34
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	Aluminium (Total)	10	2,740	8,400	102
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	C10 - C36 (Sum of total)	50	<50	590	169
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	C10 - C40 (Sum of total)	100	<100	700	150

Date	Primary Sample ID	QC Sample ID	Sample Type	Analyte	Primary Laboratory LOR (ug/L)	Primary Result (ug/L)	QC Result (ug/L)	RPD (%)
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	C6 - C9	20	320	2,100	147
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	C6 - C10	20	320	2,200	149
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	Bicarbonate Alkalinity (as CaCO3)	1,000	141,000	41,000	110
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	Total Dissolved Solids (TDS)	10,000	5,490,000	3,900,000	34
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	Electrical Conductivity @ 25°C (lab)	1	8,100	5,900	31
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	Total Phosphorus (as P)	10	430	20	182
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	Nitrate (as NO3-N)	10	2,670	20	197
7/12/2022	SBT-GW-1024_071222	QC8_071222_JF	Triplicate	Methyl Ethyl Ketone (MEK)	50	60	380	145
13/12/2022	SBT-GW-1043	QC10-131222-TX	Triplicate	Iron (Filtered)	50	23,700	11,000	73
13/12/2022	SBT-GW-1043	QC10-131222-TX	Triplicate	Cobalt (Filtered)	1	101	72	34
13/12/2022	SBT-GW-1043	QC10-131222-TX	Triplicate	Ammonia (as N)	10	150	70	73
12/12/2022	SMGW-GW02-D	QC8-121222-JP	Triplicate	Manganese (Filtered)	1	131	260	66
12/12/2022	SMGW-GW02-D	QC8-121222-JP	Triplicate	Iron (Total)	50	11,000	43,000	119
12/12/2022	SMGW-GW02-D	QC8-121222-JP	Triplicate	Aluminium (Total)	1	890	4,000	127
12/12/2022	SMGW-GW02-D	QC8-121222-JP	Triplicate	Manganese (Total)	1	239	360	40
12/12/2022	SMGW-GW02-D	QC8-121222-JP	Triplicate	Bicarbonate Alkalinity (as CaCO3)	1,000	10,000	5,100,000	199
12/12/2022	SMGW-GW02-D	QC8-121222-JP	Triplicate	pH (Lab)	0.1	5.9	4.1	36
12/12/2022	SMGW-GW02-D	QC8-121222-JP	Triplicate	Total Phosphorus (as P)	10	230	140	49
12/12/2022	SMGW-GW02-D	QC8-121222-JP	Triplicate	Ammonia (as N)	10	90	<10	160
12/12/2022	SMGW-GW02-D	QC8-121222-JP	Triplicate	Total Kjeldahl Nitrogen (as N)	100	1,000	2,900	97
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	Iron (Filtered)	50	1,590	3,300	70
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	Manganese (Filtered)	1	567	240	81
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	Iron (Total)	50	21,400	13,000	49
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	Aluminium (Total)	10	10,800	3,200	109

Date	Primary Sample ID	QC Sample ID	Sample Type	Analyte	Primary Laboratory LOR (ug/L)	Primary Result (ug/L)	QC Result (ug/L)	RPD (%)
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	Cobalt (Total)	1	13	7	60
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	C10 - C14	50	<50	2,100	191
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	C15 - C28	100	<100	1,200	169
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	C10 - C16	100	<100	1,600	176
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	F3 (C16 - C34)	100	<100	800	156
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	Bicarbonate Alkalinity (as CaCO3)	1,000	1,040,000	1,100,000	165
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	Total Phosphorus (as P)	10	70	130	60
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	Ammonia (as N)	10	1,300	2,500	63
15/12/2022	SBT-GW-3022	QC16-151222-JP	Triplicate	Total Kjeldahl Nitrogen (as N)	100	1,900	3,900	69
16/01/2023	SBT-CM-1022	QC18_160123_JF	Triplicate	Iron (Total)	50	3,760	2,700	33
16/01/2023	SBT-CM-1022	QC18_160123_JF	Triplicate	Aluminium (Total)	10	25	14	56
16/01/2023	SBT-CM-1022	QC18_160123_JF	Triplicate	Cobalt (Total)	1	233	160	37
16/01/2023	SBT-CM-1022	QC18_160123_JF	Triplicate	Total Phosphorus (as P)	10	640	50	171
16/01/2023	SBT-CM-1022	QC18_160123_JF	Triplicate	Nitrate (as NO3-N)	10	880	70	171
16/01/2023	SBT-CM-1022	QC18_160123_JF	Triplicate	Total Kjeldahl Nitrogen (as N)	100	3,700	2,500	39
18/01/2023	SBT-GW-4021	QC20_180123_JF	Triplicate	Total Phosphorus (as P)	10	4,150	1,800	79
18/01/2023	SBT-GW-4021	QC20_180123_JF	Triplicate	Ammonia (as N)	10	250	900	113
18/01/2023	SBT-GW-4021	QC20_180123_JF	Triplicate	Nitrate (as NO3-N)	10	20	290	174
18/01/2023	SBT-GW-4021	QC20_180123_JF	Triplicate	Nitrite (as NO2-N)	10	40	130	106
18/01/2023	SBT-GW-4021	QC20_180123_JF	Triplicate	Total Kjeldahl Nitrogen (as N)	100	3,800	15,000	119

LOR: limit of reporting

Comments:

- A total of 11 duplicate samples (comprising 1,986 individual results) and 11 triplicate samples (comprising 1,605 individual results) were compared against 11 different primary samples.
- There were 90 results that exceeded of adopted RPD criteria: 28 duplicate samples and 62 triplicate samples. This represents exceedances of approximately 2.5% of calculated RPDs.
- The majority of RPD exceedances were for nutrients (including ammonia, total kjeldahl nitrogen, nitrate) and both dissolved & total metals (including iron, aluminium and manganese). Sampling was undertaken using Hydrasleeves™, which take a sample from one metre of the water column. Where there is stratification, or fresher water close to the water table, there can be variation as the sample bottles are filled and the sampler is drained.
- The assessment of field duplicate data against primary samples results shows generally good correlation between the intra- and inter-laboratory data pairs. The relatively small number of RPD exceedances (2.5%) in comparison to the nominated acceptance criteria is not considered to significantly impact the reliability and useability of the overall primary data set.

This QAQC assessment of field duplicate results is preliminary in nature and will be revised following completion of the baseline groundwater assessment. Based on the preliminary assessment of RPD exceedances the dataset is considered to be of acceptable quality.

QC Sample Results were:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

3.3 EQUIPMENT RINSATE BLANKS

Rinsate samples were collected to assess if procedures for decontamination of non-disposable sampling equipment were adequate to minimise for cross-contamination between sampling points.

Rinsate samples were prepared in the field using laboratory supplied bottles and distilled water used for the cleaning of non-disposable sampling equipment. Rinsate samples were collected at a rate of one per sampling event where non-disposable sampling equipment was used. A total of 26 rinsate samples have been collected to date. Analytical results for rinsate samples are expected to be below the laboratory Limit of Reporting (LOR).

Rinsate samples reporting detectable concentrations are summarised in Table 3.4.

Table 3-4: Rinsate Detects Sample Summary

Sample ID	Laboratory Report ID	Date	Parameter	LOR	Analytical Result > LOR	Comments
RB_251122_JP	ES2242849	25/11/2022	Zinc	5 µg/L	9 µg/L	Result slightly above LOR. Primary samples collected on this day are a magnitude higher than the rinsate concentration.
RINSE-151222-JP	ES2245622	15/02/2022	TPH C_6 – C_9 / TRH C_6 – C10 / TRH Fraction F1	20 µg/L	60 µg/L	All primary samples concentrations below the LOR.

Comments:

Where minor detects were noted in the two rinsate samples, concentrations in primary samples were either significantly higher, or were below detect, indicating that the samples had not been compromised. QC rinsate samples collected indicate that the procedures for decontamination of non-disposable sampling equipment implemented have been adequate and the data is acceptable for use.

Rinsate Sample Program:	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

3.4 TRIP BLANKS

Trip blanks were used to assess whether sample storage and transport procedures minimised the introduction of contamination to a sample during storage and transport.

Trip blanks used laboratory prepared vials of distilled water that remained with the sample containers during sampling and transport to the laboratory. At no time during these procedures were the blanks opened. Analytical results are expected to be below the laboratory reporting limits.

Fourteen trip blanks have been analysed to date. All results were below the limit of detection.

Comments:

This QAQC assessment of equipment rinsate blanks is preliminary in nature and will be revised following completion of the baseline assessment. However, as all 10 trip blanks analysed reported concentrations below the limit of reporting, the methodology for collection and handling of samples for is considered to have been appropriate.

Trip Blank Sample Program:	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

4. LABORATORY INTERNAL QUALITY CONTROL

The primary laboratory Australian Laboratory Services (ALS) and secondary laboratory Eurofins are accredited by the National Association of Testing Authorities (NATA) for their ability to provide quantitative evidence of their ability and competence to produce reliable, quality results against recognised benchmarks. Each laboratory method used undergoes a validation process before it is adopted by the laboratory and accredited by NATA. As part of the validation process, the precision and accuracy of the method are established.

In addition, laboratories conduct their own quality control testing to monitor and record their performance on each reported batch of samples. The results of this ongoing testing are compared with the original validated precision and accuracy records. The results from the laboratory internal quality control reports are summarised below.

4.1 SAMPLE HOLDING TIMES

The recommended sample holding times are set by the receiving laboratory.

Of the samples analysed to date, all holding time requirements were met, with the exception of pH, which has a holding time of 6 hours. A total of 59 sample holding time exceedances for pH have been identified

Due to the short holding time and distance from the laboratory, field pH readings were also collected.

This assessment indicates that where practicable samples were analysed within the recommended holding times.

Sample Holding Times:	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

4.2 METHOD BLANKS

A method blank is an analyte free matrix, which is carried through the complete preparation and analytical procedure. The method blank is used to evaluate contamination resulting from the full sample preparation and analytical procedure. The results from method blank samples should be below the reporting limit.

Comments:

A total of 436 method blank samples were analysed in the same laboratory runs as the current groundwater data set. A total of 7,996 analyses were conducted on method blanks, with no detectable concentrations reported.

This assessment indicates that sample preparation and analytical procedures have not contributed to the concentrations reported.

Laboratory Method Blanks:	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

4.3 MATRIX SPIKES

A matrix spike is a separate subset of a sample spiked with known concentrations of the analytes of interest. It is analysed to identify matrix interferences, and if the analytical procedure is within established control limits.

The default acceptable range of 70% - 130% has been adopted for matrix spike recovery results, and as the default acceptance limits for the difference between analysis results and the expected result for reference materials. Specific methods which have their own pre-determined acceptance limits, as outlined by the NATA accredited laboratories, are also highlighted in the laboratory reports where the limits are exceeded.

Comments:

Based on the current dataset, a total of 398 matrix spike samples were analysed in the same laboratory runs as the current groundwater dataset, with 1,250 matrix spike analyses conducted.

A total of 8 matrix spike analyses (0.7% of the total matrix spikes conducted) reported recoveries outside the acceptable limits.The percentage of total matrix spike analyses outside the acceptable limits is not expected to affect the integrity of the overall data set.

Laboratory Matrix Spikes:	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

4.4 LABORATORY DUPLICATES

The laboratory duplicate is a separate subset of samples carried through the complete preparation and analytical procedure. Comparison of the primary sample to the laboratory duplicate yields a precision measurement for a given matrix.

Precision of results is measured by the RPD between duplicate samples analysed by the laboratory. Acceptable RPDs as defined by ALS are dependent on the magnitude of the results relative to the level of reporting as detailed below:

- No RPD limit for results less than 10 times LOR.
- 0% to 50% for results between 10 and 20 times LOR.
- 0% to 30% for results greater than 20 times LOR.

Comments:

A total of 6,754 laboratory duplicate results from 938 laboratory duplicate samples have been analysed to date.

Based on the current dataset, 19 laboratory duplicate analysis (0.28% of the total laboratory duplicate analysis conducted) reported an RPD result outside the acceptable limits, and therefore the precision of the overall data set is considered acceptable.

Laboratory Duplicates:	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

4.5 LABORATORY CONTROL SAMPLES

A laboratory control sample (LCS) is a clean matrix (not containing any of the analyte of interest) spiked with known concentrations of the analytes of interest. LCS samples are analysed to determine if the procedure is working within established control limits where matrix interference is not an issue.

A default acceptable range of 70% - 130% has been adopted for laboratory control sample recovery results.

Comments:

- There was a total of 8,393 laboratory control results from 963 samples.
- A total of 35 laboratory control results (0.42% of the total results) reported recoveries outside the acceptable limits.

Given the small number of recoveries reported outside the acceptable limits, extraction efficiency is considered to be appropriate, and the quality of the dataset is considered acceptable.

Laboratory Control Samples:	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

5. DATA USABILITY

1. Data Directly Usable ☒
2. Data Usable with the following corrections/modifications (see comment below) ☐
3. Data Not Usable ☐

COMMENTS

Overall, of the 37,966 individual analyses conducted to assess data quality, issues were identified in 213 (~0.6%) analyses. A summary of these issues is provided in Table 5-1 below.

Table 5-1: Summary of Analyses

Sample Type	Total Number of Analyses	Number of Identified Issues	% of Analyses with Identified Issues	Comment
Duplicate/ Triplicates sample analyses	3,591	90	~2.5%	RPDs outside acceptable range
Field quality control sample (Rinsates and Trip Blanks) analyses	1,364	2	~0.2 %	Concentrations reported above the LOR in Rinsate and Trip blanks
Internal laboratory analyses	33,011	121	~0.4 %	Lab duplicate RPDs, Method blank detections, Matrix spike recoveries, laboratory control recoveries and surrogate recoveries outside of control limits.
Total	**37,966**	**213**	**~0.6%**	-

The following issues and observations should be noted when using the data:

- RPDs outside the acceptable range indicate that there is some heterogeneity (likely due to stratification) in groundwater at some locations.

Overall, as the percentage of issues identified in the preliminary quality assessment was well below 5%, the data is considered acceptable for use.